EMPHASIS ON DOOR-TO-DOOR FREIGHT SERVICE

See Page 2



"THE TIMES" OF THE TRANSPORT WORLD

FREIGHT
REVOLUTION
ON
BRITISH
RAILWAYS

See Pages 3, 5, 13

VOL. LXXX No. 2067

[Registered at the G.P.O.]

LONDON, NOVEMBER 8, 1958

PRICE NINEPENCE

Accidents on Railways

THE first report on accidents signed by Brigadier C. A. Langley as Chief Inspecting Officer of Railways refers to the year 1957. Although the number of train accidents was slightly fewer than in 1956, the year was marred by the large number of passenger fatalities. It opened with the serious collision near Welwyn Garden City, where an engine driver ignored a distant signal at caution and ran past two stop signals at danger; it ended tragically with the collision at St. John's, Lewisham, where in dense fog a driver failed to see two warning colour-lights and passed the third at red. It may be thought that this type of accident is on the increase, but on the contrary records show that accidents arising from drivers having passed signals at danger have declined steadily from an average of 59 for the five years 1951-55 to 35 in 1957. These numbers were a very small proportion of the year's 1,205 train accidents, but unfortunately they accounted for 90 of the 92 passenger fatalities. Furthermore, during the last 12 years 55 per cent of all passenger fatalities in train accidents have been due to this same cause. The extension of automatic warning control to all main lines and additional provision of colour-light signals will do much to aid drivers, as will the better view from the cabs of diesel and electric There remains, nevertheless, the problem of the apparently unaccountable lapses on the part of some drivers to observe signals, into which the British Transport Commission intends to make a special investigation with the help of a panel of scientific experts and the co-operation of the trades unions. This is an important innovation which may serve to solve, or at least to alleviate, an intractable problem which we believe has considerably exercised the Ministry of Transport inspectorate. Ventilation of the subject with its elements of signal-sighting, fatigue, distraction and other factors, should be beneficial. A summary of certain features of Brigadier Langley's report appears on

The Economic Outlook

page 9.

AUTHORITATIVE views on national finance were voiced at a conference of the Institute of Directors held in London last week. Prophesying expansion, Mr. Heathcote Amory, Chancellor of the Exchequer, said we had gained during the past half-year what might be called the surplus of the century. Circumstances were plus of the century. Circumstances were with us in the form of cheaper imports, and we could not expect to repeat such a good performance in the second half-year. World trade was still declining slightly and our exports were falling. Lord Cohen, chairman of the Council on Prices, Productivity and Incomes, said that the Government's restrictive policies must be given much of the credit for the fact that by last August our economic affairs were going distinctly better than a year ago. But to pay the price of this success we had had to suffer a check to the growth of production and a certain increase in unemployment, though neither had gone to anything like catastrophic lengths. No one wanted to see a serious recession develop; further measures to encourage demand were being taken and they might well be increased as the months went by. Echoing the Council's warning of the need for caution he said that if the pressure of demand were allowed to build up to the peak levels of the past we should certainly see a return to inflation. The Government would have to proceed gradually and with circumspection; inflation was an evil which in the end they would have to find a way of eliminating. In an appeal for improved labour relations, Sir Hartley Shawcross, Q.C., said that management and men must be willing to get rid of restrictive practices. Stoppages-2,500,000 man-hours were lost in the shipbuilding industry alone in the first eight months of this year—were deplorable and so were out-dated demarcation disputes. Trouble was frequently caused by lack of information amongst the rank and

CURRENT TOPICS

Delay in Singapore

TINIFICATION of bus services in Singapore as a step towards nationalisation may be deferred for a considerable period. The Minister for Communications and Works, Mr. Francis Thomas, told members of the Legislative Assembly recently that the postponement would not affect the eventual plan, but the money was not available. In the meantime it is hoped to engage a new transport adviser to work with the department under the Colonial Development and Welfare Plan. The previous carefully worked out plans for rationalisation and eventual public ownership or operation by a statutory company with Government shareholding were made by Mr. Leonard C. Hawkins, a member of the London Transport Executive well versed in the practical problems of unification as well as in its finance. No estimate beyond "millions of dollars" was given to the Singa-pore public by Mr. Thomas of the cost of the mind a suggestion of varying fares for the branch lines. The Committee also finds that the continued need for Mornington Crescent Station has been established and that no further action towards its closure should be taken at present. The recommendations will go to the Central Transport Consultative Committee, which will be meeting on November 25 and will report to the Minister of Transport, whose decision is final. To close tube stations half an hour earlier may well affect the night life of London and inconvenience those who like to sup after the theatre; but this surely is a social need the cost of which neither the Commission nor its other fare-paying passengers should be called upon to bear.

A Limit to Cross-Subsidy

WHILST having to pay its way, taking one year with another, the Commission is enjoined by its charter to provide adequate services. In his recent

important to each other today and they are likely to remain so in spite of many new inventions and practices." Although he was not the head of a Railway Commission but of a Transport Commission, he had little hesitation in claiming to represent their best customer. It was not for nothing that the railways acquired the name of the iron road and the locomotive that of the iron horse. "Just as I claimed to represent your best customer so may you with justice claim to be one of ours. Our railways in particular are very dependent upon the traffics which they carry for the iron and steel industries. As I said in the speech which I made elsewhere recently the drop in our carryings of raw materials and manufactured products for these industries is hurting us a lot just now." But the two industries were so dependent upon each other they must strive to understand each other's problems and they must co-operate for their mutual benefit. The future of both was assured and bright. The only people who thought to the contrary about railways were "those who do not understand the potentialities of a really modern railway system, plus those whose own prejudices lead them to indulge in wishful thinking." The Minister of Transport was elaborating plans for speeding modernisation and economies as we went to press.

LEADING FEATURES IN THIS ISSUE

Portrait PAGI	E PAGE	GE
Special Articles Emphasis on Door-to-Door Freight	7 Television in Vehicle Testing: Use by Vauxhall Motors	
	5 Financial Results 16	
Latest New York Buses : Aircraft	Forthcoming Events 2	
Lounge Seating (6 Important Contracts 16	
Commercial Vehicle Test—No. 454:	Lorry, Bus and Coach News 4	
Bedford Diesel Dropside 7-ton	News from All Quarters 8	
Lorry: Outstanding Performance	Shipping and Shipbuilding 16	
	7 Social and Personal 15	
	9 Tenders Invited 16	

action now postponed, although the press suggests that there may be sufficient funds still available in the Government's reserve. The unfortunate effects on the service to the public are not difficult to foresee. The Hawkins commission deemed services inadequate and the licensing system unsatisfactory as a medium of co-ordination. Traffic potential has increased since then but licensing has stagnated; operators under threat of nationalisation can hardly be expected to devote resources to the improvement of rolling stock and services. Amalgamation of the companies into stronger units capable of extending facilities seems an urgent interim measure, even if complete unification cannot be achieved.

Paying the Piper

THE odds against B.T.C. attempts to secure the operating economies needed to put its finances on a firm basis are well illustrated by a recent decision by the Transport Users' Consultative Committee for London. This is to recommend that London Transport should withdraw completely its proposals to curtail the working day on the tube railways, in view of "the very serious repercussions which they would have upon the industrial and social life of London as a capital city." Considerable opposition had been voiced before the Committee-notably from the London County Council, the catering, baking and newspaper industries, and the British Travel and Holidays Association -to the Executive's proposal to withdraw from next February Underground trains in the first and last half-hours of the present working day. The Committee also recommends that the closing of Aldwych branch line should be deferred for a year, and that the Executive should reconsider the proposal to close the South Acton branch, bearing in

address to the Rotary International Conference at Eastbourne Sir John Elliot, chairman of the L.T.E., pointed out that no Act had yet laid down what was meant by adequate. This, he thought, was wise, "the day-to-day interpretation being left to such experience and judgment as the management may have, spurred on by public approval (seldom) and public criticism (continuous). It was their practice, he said, to assess on one side the hardship likely to be involved if a service was not provided and, on the other, the loss likely to be incurred if a service was provided. In fact, services were provided at a loss every day, so much so that the whole of the London Underground and about half the bus services failed to cover their full costs including interest on capital. Half London would be without public transport, he said, if the strict test of profitability were applied. In the nature of things some passengers are subsidised by others, and some degree of internal or crosssubsidy is inevitable in an undertaking as large as London Transport. But there are limits and where, as in early and late services, public patronage is small then there may well be a case for withdrawal, for bus substitution, or for the raising of fares for those services to an appropriate level.

Iron and the Iron Road

SPEAKING at the annual dinner of the Joint Iron Council Sir Brian Robertson,

chairman of the British Transport Commission, said that iron, coal and railways were the three essential ingredients from which the industrial prosperity of England had been compounded. "The three industries are complementary. Not one of them would have developed to the same extent without the aid of the other two. They are immensely Cars to Scotland by Rail

SINCE its introduction in 1955 The Car-Sleeper Limited, the Eastern Region's cars-by-rail service between London and Perth, has steadily grown in popularity. During the 1958 season, nearly 5,000 cars were carried by this service—a 10 per cent increase over the previous year. At the height of the summer, the demand for carsleeper reservations was so heavy that relief trains were run from Kings Cross and Marylebone to cope with the extra traffic. Applications for 1959 bookings have already been received at the Kings Cross car-sleeper office and at the British Railways stand at the Motor Show. Although The Car-Sleeper Limited operates only from March to October, motorists wishing to avoid an arduous 400- or 500-mile road journey between London and Scotland during the winter, can avail themselves of the "winter motoring" service. Whereas The Car-Sleeper Limited caters for train-loads of cars and passengers, the winter service operates on a reduced scale—cars being conveyed in vans attached to certain ordinary Anglo-Scottish overnight expresses. The "winter motoring" facility operates between Kings Cross, Edinburgh, Perth, Aberdeen and Inverness.

Sixty Years a Greyhound

OF all the locomotives of the London and South Western Railway none is probably so well remembered as No. 720, the big four-cylinder double single designed by Dugald Drummond and built at Nine Elms in the summer of 1897. The sensation caused by the size and singularity of this radical design was such that the engine became a legend which has long outlived the memory of its somewhat indifferent performance. One of the first engines to put this prodigy to shame was No. 120, one of the initial batch of class To which appeared in 1899. Popularity with enginemen soon won them the colloquial name of "Greyhounds." They are now the oldest type of express passenger engine in the service of British Railways, and nowadays it is not often that they appear on main-line duties. Such an event did, however, occur recently, when, at the request of the Railway Correspondence and Travel Society, No. 120 (now 30120) took a special train from Waterloo to Liss, and after the train had negotiated the Longmoor Military Railway, from Bordon back to Waterloo. To the delight of everyone on the train the old engine gave a flawless performance, and would with a clear road have achieved some very high speeds. An engineer well versed in modern locomotive performance who travelled on the footplate declared that it was the smoothest ride he could remember . . . a nice tribute.

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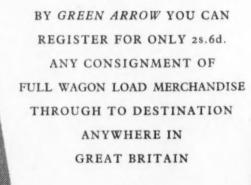


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Published Every Friday RUSSELL COURT, 3-16 WOBURN PLACE, LONDON, W.C.1

Telephone Number: TERminus 0303 (3 lines) Telegraphic Address: Transpubco, Westcent, Londo

ANNUAL SUBSCRIPTIONS British Isles, 35/-; Canada, 32/6; Elsewhere Abroad, 35/-payable in advance and postage free

The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements.

Emphasis on Door-to-Door Freight

HEALTHY outcome of railway commercial staff taking responsibility for the service and cost of whole transits from point of origin to destination would be to attune the minds of railwaymen much more to the complestic of the completion of the complestic of the completion of the complestic of the completion of the compl mentary character of road and rail transport and to lay less emphasis on their rivalry, said Mr. A. B. B. Valentine, member of the British Transport Commission, in his notable presidential address to the Railway Students Association. He was speaking a day in advance of the opening by Mr. Harold Watkinson, Minister of Transport of the freight transport exhibition of Transport, of the freight transport exhibition organised by the B.T.C. to show off to trade and industry the latest equipment for both British Road Services and British Railways. As Sir Brian Robertson said in introducing the Minister, there was a preponderance of rail exhibits, mainly because not much was generally known about the advances made in freight handling by British Railways and about the progress they had made in ensuring door-to-door service. This is, indeed, something in which the railways of Britain pioneered over so years ago; the lead has been maintained by British Railways so that our stock of 44,000 large containers is the biggest owned by any railway system in Western Europe. But we are on the threshold of a new phase of progress, the ultimate aim of which must be to displace the majority of covered wagons from railway service and replace them with containers which will carry the goods from the point of origin by road, rail, sea if necessary, and road again to the premises of the consignee. Hitherto the difficulty of container transfer at points where the number of movements was low, and, alternatively, the high cost of mobile cranes for the purpose, has been a deterrent, which makes more important the potentialities of the simple Penman transfer system which has been in successful operation for over a score of years in connection with changeovers of lorry bodies and cattle floats. An interesting feature is the continuing development of piggyback operation with road trailers carried on rail wagons, first introduced in prewar days by the L.M.S.R.

Speed and Cost

OPERATION by British Railways of the most intense passenger train service in the world perhaps obscures to many of the general public the fact that so high a propor-tion of the revenue is derived from freight traffic. The Battersea exhibition should have gone some way towards putting this in per-spective. It could not show much about the speed of transit, although this was symbolised by the vacuum-fitted wagons (250,000 are now equipped) and the demonstration of the Dowty automatic coupler. To quote the chairman of the B.T.C. again, since the export freight service was started by B.R. two years ago there has been no case recorded of a consignment missing the ship. The service now links 500 stations with seven principal ports. Overnight delivery is now assured between a very large number of places and the number of scheduled express freight trains has greatly increased. There are now 760 each working day compared with 300 in 1938. "As regards charges it depends upon the nature of the load and the distance involved, whether it is cheaper to consign by road or rail. Our British Road Services," said Sir Brian, "claim that charges are fully competitive with those of competitors on the road, though being conceited people they think the efficiency of their service should justify a premium. As for British Railways, the trunk movement costs of a well-loaded wagon or container are low. By keeping the terminal and shunting costs low also, the railways can and will offer attractive rates, especially for wagon-load and container-load

More than Modernised Equipment

IN this session the Railway Students Association is celebrating its golden jubilee and Mr. Valentine linked that milestone with the vital turning point now reached in the history of British Railways, involving much more than modernisation of equipment—changes indeed in commercial outlook, economic aims and operating methods in the freight field to which railway students had to get accustomed. But first he referred to misconceptions on modernisation; many critics did not realise that nearly half the total sum would be spent anyway on renewals and that it was only

sensible to get the benefit of modern improvesensible to get the benefit of modern improvements in the spending of the money. Secondly, the £1,500 million represented expenditure on rolling stock and track and only £100 million related to way and works, with another £100 million on signalling—or £7 million a year for 15 years on track and a similar amount on signalling, compared with the minimum level of £60 million a year to be spent on new roads and improvements to roads over the next few years. An effective comparison of all road and improvements to roads over the next few years. An effective comparison of all road expenditure—highways and vehicles—would give a 15-year total (without private cars) of something like £4,500 million or three times the railway modernisation plan total. Another misunderstanding was that modernisation implied re-equipment of all the existing railway system, whereas it was always envisaged that system, whereas it was always envisaged that it would involve "a purposeful concentration on those functions which the railways can be made to perform more efficiently than other forms of transport." The railway system of the to meet the needs of today. In fact, the rise of mechanical road transport would prove a a blessing to the railways once the system and methods have been adapted to take advantage of it and to encourage a redistribution of traffic between road and rail on a more economic basis.

Overcoming Difficulties

EFFORT had to be directed towards a much higher degree of concentration of rail traffic, because there was no doubt that when collected into goods train loads rail transport service per ton-mile was far cheaper on busy routes than would ever be possible by road, so that it could bear the cost of much assembly, sorting and distribution before the door-to-door cost, except on short distances, approached that of road. But practical difficulties in closing wayside stations are considerable. Ways must be devised to relieve branch lines and superfluous depots on main lines of coal and other wagon load traffic and to deal with them elsewhere on the railway. It must be done, to avoid continuing to burden the railways (and in the end the customers) with the enormous aggregate costs of small un-economic depots. Resistance from the public to sensible pruning operations springs probably from presentation of plans piecemeal to the consultative committees, so that inconvenience to the few looms larger than the individual unit of economy. The purpose should be seen in its true light of a smaller railway system aided by road transport which would be much more efficient and therefore cheaper, to the gain of the community as a whole. Further, the present position of the railway system under the 1953 Act, with a requirement to pay its way in a highly competitive setting, removes any shred of a logical basis for the social obligations to which the railways were made subject in the past. Any remaining legal obstacles to freedom ought now to be removed. Mr. Valentine's outline of the commercial future of the railways must indeed have left his audience with a buoyant faith in the potentialities of modernisation. The exhibition at Battersea, which we hope will also be staged in the great provincial cities, must have still further strengthened it.

Forthcoming Events

At Public Works and Municipal Services Congress, Olympia. 2,30 p.m.
Historical Model Railway Society. Paper by Dr. J. R. H. Hollick, "The Calden Low Tramways." At Railway Tavern, Liverpool Street, E.C. 3. 7 p.m.
Railway Correspondence and Travel Society (Northampton). Paper by Mr. P. B. Whitehouse, "The End of an Era—the Rise and Fail of the Narrow Gauge in the British Isles and Eire." At Liberal Club, Castilian Street, Northampton. 7.30 p.m.

ampton. 7.30 p.m.

vember 11.—Institute of Transport. Anniversary luncheon.
Speaker Mr. N. R. Crump. At Connaught Rooms, Great
Queen Street, W.C.2. 12.30 p.m.
Institute of Transport (North Staffordshire). Paper by
Mr. R. V. Baker, "Air Transport." At Grand Hotel, Hanley.

Mr. R. V. Baker, 3.30 p.m. Institute of Transport (Portsmouth). Paper by Mr. C. N. Institute of Transport (Portsmouth). The Commerce, Portsmouth. 7 p.m. Institute of Transport (Yorkshire). Paper by Mr. G. F. Fiennes, "Service by Modernisation." At Griffin Hotel,

Leeds. 6,30 p.m.
Leeds. 6,30 p.m.
Institute of Road Transport Engineers (Midland). Paper by Dr. H. J. H. Starks, "Research on the Testing and Performance of Commercial Vehicle Brakes." At Exchange and Engineering Centre, 19 Stephenson Place, Birmingham. 7,30 p.m.
Institute of Road Transport Engineers (East Midland). Paper by Mr. A. J. Briscoe, "Management and Personnel Control." At Mechanics Institute, Nottingham. 7,30 p.m.
Institution of Mechanical Engineers (Automobile). Paper by Mr. T. C. F. Stott, "Fatigue Testing of Vehicle Components." At I. Birdcage Walk, S.W.I. 6 p.m.
Pernament Way Institution (York). Paper by Mr. J. Costs Money." At Railway Institute, York. 6,45 p.m.

Dosson, This Costs Money. At Railway Institute, York.
6.45 p.m.
November 12.—Institute of Transport (Southern). Paper by Mr.
R. S. F. Edwards, "London Airport." At Offices of the
Harbour Board, Southampton. §45 p.m.
Institute of Road Transport Engineers (Southern). Paper
by Mr. R. H. Patman, "Some Problems and Responsibilities
of an Industrial Fleet Operator." At Royal Star Hotel,
Maidstone. 7.30 p.m.
Institution of Locomotive Engineers. Paper by Mr. B. W.
Anwell, "Developments in the Design of Diesel Locomotives." At Institution of Mechanical Engineers, I Birdcage
Walk, S.W. I. §3.0 p.m.
Royal Society of Arts. Paper by Mr. C. J. Allen, "The
Future of Railways." At John Adam Street, W.C. 2. 2.30 p.m.
lovember 13.—Institute of Transport (South Western). Paper
by Mr. H. D. Muirhead, "Publicity and Advertising with
Particular Relation to Road Passenger Transport." At
Great Western Hotel, Exeter, 12.30 p.m.
Institution of Railways Signal Engineers (York). Paper by
Mr. W. H. Ellis. "Automatic Operation of Marshalling
Yards." At Signalling School, Toff Green, York. §3.0 p.m.
B.R. (Western Region) London Lecture and Debating
Society. Paper by Sir Arthur Kirby, "Transport Problems
in East Africa." At H.Q. Staff Dining Club, Bishops Bridge
Road, W. 2. 5.45 p.m.

ovember 14.—Institute of Transport (East Midlands). Annual dinner and visit of president. At Victoria Station Hotel, Monter and visit of present description of the control of the cont

6.45 p.m.
Institution of Highway Engineers. Annual general meeting and annual luncheon. At Park Lane Hotel, Piccadilly, W.I. 12.30 p.m.

FREIGHT REVOLUTION

On the Railways

By A. B. B. VALENTINE, M.Inst.T., Member, British Transport Commission*

I HAVE spoken confidently of my belief in the ability of a modernised railway system to win a much larger share of general merchandise traffic, and that would extend in varying degrees to many special traffics such as steel sheet, cement, bricks, fish and certain important agricultural products, which I have not so far mentioned. I hope I have not given the impression that the railways have only to reduce their total costs and simplify their operations by closing a lot of branch lines and wayside stations and depots, make some simple adjustments of freight charges to render them more realistic, and then rely on the modernisation of their equipment, particularly rolling stock and motive power, to do the rest. It is not quite as easy as that.

All the future traffic I envisage on the railways will not fall into their lap without other

All the future traffic I envisage on the rail-ways will not fall into their lap without other radical departures from traditional operating methods and commercial practice. A great many of the changes required are technical and special to particular traffics, and arise from the need for a much more detailed attention to the peculiar problems and requirements of individual trades and customers. Two vital changes are of great importance to my mind. One is concerned with the transfer of goods between rail and road and the other with charging.

Door-to-Door Service

Where the railways are competing with road transport, whether public or private, they are up against door-to-door transport, and to compete successfully they must concern themselves much more than in the past with the throughout service to final destination, both as regards safe and reliable delivery and as regards throughout cost. It is sometimes not realised how very large a proportion of railway freight traffic does in fact enjoy door-to-door service by rail alone. Over 90 per cent of the tonnage of freight carried by the railways is forwarded from private sidings and ports, and nearly 75 per cent is delivered to private sidings and ports, using rail transport throughout. Most of the coal, ores, bulk raw materials and products of heavy industry are efficiently moved in this way and this is the bread-and-butter business of the railways which it is certainly in their power to retain on the merits of the service they can offer and its cost.

the merits of the service they can offer and its cost. But this traffic alone will not absorb the full capacity of our railway system even when streamlined; and in the case of other traffics, if the railways are substantially to increase their share, nothing is more important than to simplify the process and cheapen the cost of transhipment between road and rail at each end of the rail portion of the journey. Immense strides have been made in recent years to develop equipment—containers, demountable bodies and pallets, and fork-lift trucks and special cranes to handle them—designed to solve the problems of transhipment. The object is, of course, not only to reduce the high cost of handling operations at the transfer points between the railway wagon and road vehicle, but also to eliminate delays and risks of damage in the process of transfer and the need for costly packaging which otherwise would be required for some types of traffic when involved in intermediate transhipment. The primary aim of the exhibition of the newest

The primary aim of the exhibition of the newest freight transfer equipment at Battersea Wharf is to show facilities for door-to-door transport involving both rail and road vehicles, including experimental transfer and other equipment still in the development stage, as well as equipment and special types of wagon for dealing with traffic in sidings. The subject is so important to industry as well as to the railways that I am particularly glad that your committee has invited Mr. Flaxman to read us a paper about it on November 26. These developments will widen the field in which the railways can offer trunk haulage of demountable bodies or containers by rail, with simplified transfer operations and delivery by road, at lower inclusive prices than the cost of trunk haulage by road—and without offsetting disadvantages of delays, damage risks or packing costs.

Transfer Points-Not Terminals

All these new methods of dealing with transhipment call for a new attitude of mind as to the scope of the railwayman's task in relation to freight customers—and to the uses of road transport. We must no longer think of what we have called terminals in the past as places where rail transport ends, but as places where traffic is transferred from one form of transport to another. Perhaps it would be a good thing to delete the word terminals altogether from our railway vocabulary so far as freight is concerned (except when referring to private sidings and ports) so as to emphasise both to ourselves and to others our interest in the throughout transport, whoever owns and operates the road transport elements at either or both ends of the journey. Unless the commercial railway staff master and take responsibility for the service and the cost of the whole transit from point of origin to destination they will never be able to compete on quite equal terms with the road haulier offering a throughout service in one vehicle, or to talk the same language to C-licensees.

Another healthy outcome of this attitude will be

Another healthy outcome of this attitude will be to attune our minds much more to the complementary character of road and rail transport and lay less emphasis upon their rivalry. In fact I believe that when the railways have been modernised and charges are more realistic, the field for keen competition in which road and rail can offer closely corresponding terms and service will be a good deal smaller than it seems today. The future relationship between road and rail must be thought of mainly in terms of co-operative arrangements designed to combine the best features of each form of transport in the common interests of the undertaking and of industry and trade.

This prompts me to say to railway students of all ages that what I think we want to cultivate in transport education is the training of a breed of "transport-men" much more than two separate breeds of "railmen" and "roadmen." There will always be railway specialists, of course. But I am sure that not only railway traffic men but a

good many of the technical men, too, especially those concerned with rolling stock and handling equipment, would have a much sounder foundation for their work and a greater capacity to render good service to the country as a whole, if they could acquire a thorough understanding of the problems, methods, services and costs of road transport.

New Approach to Charging

The other big imminent change in our outlook and methods which I want to emphasise relates to charging. I have referred to the need to bring freight charges more closely into line with costs, which was not even an objective of the old charging system as originally evolved for the railway monopoly days. But I certainly did not mean that all the railways have to do is to devise, and then apply, new scales of the old familiar type for this and that commodity on a basis calculated to produce a reasonable surplus over the average cost of transporting each of the commodities concerned in all conditions. Far from it—for two reasons. First, the cost of transporting goods by rail (whatever method be employed of apportioning the joint costs necessarily shared with other traffics) commonly varies very widely from one case to another according to far more factors than the character of the commodity itself reflected in its loadability, the weight of the consignment, and the length of the haul.

the haul.

It varies far more widely than the costs of road transport because the road operator, having paid for his licence, has the freedom of the national road system and his track costs per vehicle-mile are related directly to the mileage run. The railways on the other hand have to maintain their own tracks out of the revenue from traffic using them, and if the traffic over a particular route is very light the track and signalling costs per vehicle-mile can be phenomenally high. Other important variable factors affecting the cost of a particular movement of goods are the amount of shunting and marshalling involved; the opportunity or otherwise to combine the consignments concerned with other traffics to make up full wagon loads or train loads; whether the traffic is regular in its incidence and whether it is consistent in its volume; and whether its fluctuations are unpredictable or known in advance. Secondly, there is the fact of competition. Under the conditions now established it is no use ignoring the "market." An attempt to base railway freight charges on average costs could only result in the loss of a great deal of traffic with favourable characteristics that could be profitably carried at a lower charge, and a failure to make any profit at all on some traffics for which costs are specially high.

Rationalisation

The rationalisation of charges is therefore likely, as I see it, more and more to involve a detailed study of the circumstances and costs of carrying the traffic—and potential traffic—of individual customers one by one; and the negotiation with each of arrangements and terms which take into account all the kinds of factors I have mentioned, including regularity and permanence. Nor must it ever be forgotten that because of the very high proportion of fixed costs inherent in all railway working, the more the railways are used, the larger will be the traffics over which these fixed costs can be spread and the cheaper the cost of all rail transport will become. This reasoning clearly points to the scope for some form of application of the principle of two-part tariffs as used in electricity supply.

This sort of policy, no doubt, may seem at first a little strange and unfamiliar to some traders, long accustomed to the different principles of railway charging in the past. But given the competitive

This sort of policy, no doubt, may seem at first a little strange and unfamiliar to some traders, long accustomed to the different principles of railway charging in the past. But, given the competitive situation and the new freedom of the railways in regard to charging derived from the 1953 Act and the freight charges scheme, it is surely good economics and sound business. After all, if the costs of carrying the traffic of two firms really differ, because their requirements or circumstances differ, there is no logical or economic reason why the charges they pay should not differ; as indeed would be the case if, instead of using railways, they provided their own transport. There is no tenable basis any longer for a claim that the charges to all traders for the carriage of a given commodity should be equal. At the same time the very different theory that in principle all traffics should be carried at charges which yield an equal rate of profit must also go out of the window, under competitive conditions, if only because it is better for all the users of the railways in the long run that some traffic should be carried at a lower-than-average profit than not carried at all.

Intimate Attention

For the railways these changes in commercial policy, flowing inevitably from changed conditions, will call for more intimate attention to individual customer's needs; inventiveness in meeting them, making every use of new equipment and new methods; close supervision of the service given, often throughout to destination, sometimes by staff with specialised experience of the trade concerned; and of course negotiating skill in making terms. They will radically affect the training—and the status—of the sales staff. They will demand still closer teamwork between the operating and commercial functions. The recent reorganisations in the railway regions are a purposeful preparation for the new commercial tasks.

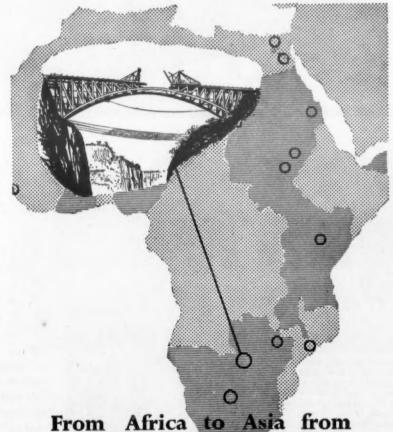
The managements and traffic staffs concerned will embark on those tasks with enthusiasm because it is a fascinating new adventure, and in good heart because properly armed they must be certain of success. "Properly armed" is a phrase which admittedly must cover a multitude of necessary virtues. The men themselves must be armed with eagerness to try out new ideas and new methods. They must be armed with the support of a market intelligence service much more thorough than was needed in the past, which—to echo a presidential address delivered earlier this month to another transport body—will reflect "a scientific approach to the problem of locating and assessing users' present requirements and forecasting future needs," and, thinking for the customer, will strive to see a future need before he is aware of it himself. And finally they will be fully armed with all the promise of more economical working and better service implicit in the modernisation plan. There are solid reasons for buoyant faith in the commercial future of the railways.



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* Abstract of presidential address to Railway Students Associa-

LORRY—BUS—COACH

Twilight of the London Bus?

In London the bus is on the way out: such is the somewhat emphatic view of Mr. Alex Samuels, chairman of the London and Home Counties Traffic Advisory Committee. "As more people can afford cars, buses lose passenger fares and become uneconomic," he says. "There is a parallel here with the ousting of public baths by private bathrooms, the cinema by television. Public transport in London may have no future. The Underground is an economic user, but the bus is certainly on the way out." A ban on private cars may be inevitable in central London to avoid paralysis, but social changes influence the question a great deal, hence the gloomy outlook for public transport. Of parking meters and off-street garages, Mr. Samuels thinks that as long as motorists can park free at the kerbside, they will never use off-street parks. These will have to be built after the introduction of meters. There are spaces for them, at present unused, in Mayfair and Marylebone. They cannot be operated free, but charges should be very low, almost nominal. "We have to build some new roads, but I don't want to knock down London to make way for them; I want to preserve the present character." says the colourful Mr. some new roads, but I don't want to knock down London to make way for them; I want to preserve the present character," says the colourful Mr. Samuels. Mr. Samuels is surely premature in thinking thus of a transport medium which carries more than eight million passengers a day; the private car could hardly be used as a substitute for carrying such numbers without choking every

"Hop on a Bus" Campaign

THIS week London Transport launched a "Hop THIS week London Transport launched a Trop on a Bus" publicity campaign to attract more passengers to use buses for travel, particularly in the off-peak hours. Because of the heavy fall in bus travel in recent years services have had to be reduced, but the cuts have been much less than the drop in the number of passengers. London Transport wants to counter this tendency and maintain the standard of bus expuises as far as it can train the standard of bus services as far as it can.
"Hop on a Bus" advertisements are appearing in
London evening papers, in local papers, on bus

sides, at bus shelters, and outside garages. The campaign's "character" is a little sandwichman with a London Transport bull's-eye head, with the "Hop on a Bus" slogan on his sandwich boards. Behind the campaign is a policy of winning people back to the bus habit by good service with regular, reliable, comfortable buses, says London Transport.

Leeds and Newcastle areas. They are hauling heavy railborne traffic, using existing drawbar trailers. A recent example was a 15-ton crane girder, 68 ft. in length by 7 ft. high by 7 ft. wide, transported on a 20-ton pole trailer from the Booth crane works. at Rodley, Leeds, to Hunslet Lane goods depot. There the girder was transferred by crane to a bogic rail wagon and the journey to Glamorgan was com-pleted by rail.

Lorries Liable to Forfeit

EIGHT lorries of an Accrington haulier, Jack Bradley (Accrington), Limited, which were found at Preston Docks to contain in their fuel tanks



The raw materials for new or better roads are hauled by this Guy Invincible tipper used by Tarmac Roadstone, Limited, Wolverhampton; right, the Bleachers Association of Manchester operates the Albion Chieftain lorry illustrated on long-distance runs

"This campaign affects our livelihoods. Its object is to make public transport popular, prosperous and successful. But it can succeed only if we back it up in the way we do our job of carrying the passenger."

Railway Heavy Haulage Tractors

TWO 15-ton capacity E.R.F. heavy haulage trac-tors, the first of their type to be introduced by the North Eastern Region of British Railways, are now engaged on general haulage work in the

fuel on which a rebate of duty had been made were found by the High Court last week to be properly liable to forfeiture to the Customs and Excise authorities. The Lord Chief Justice gave judgment thus for the Commissioners of Customs and Excise. It is understood that a sum representing the value of the vehicles was deposited with the Commisners to secure their release

The Lord Chief Justice said that the fuel in question was kerosene which could be used, mixed with fuel oil, as the fuel of motor lorries. When it

was used for moving vehicles, duty was payable. The present action depended on section 277 of the Customs and Excise Act of 1952. Mr. J. Nahum, Q.C., submitted for the defendant that "used for the carriage" meant in this sense carriage of cargo or carriage from one point to another for use at the latter point or for distribution and was quite inapt to cover incidental carriage of fuel being used on the journey. His Lordship thought that "carriage" was a very wide word and could be used to cover incidental conveyance of goods as well as cargo, and that the crux of the case was in the words "which has been used for." If one looked at the object of the journey or the intention with which the goods were carried it was clear that the purpose for which the vehicles were being used was in connection with work at the docks, and only incidentally that they were carrying the fuel for consumption; but his Lordship did not think that the words "used for!" were used in that sense. It seemed to him that the words meant "where use had been made of the vehicle to carry." Where a vehicle uses fuel in its fuel tank which is subject to forfeiture because no duty has been paid, the vehicle can be said to be "used for the carriage" of the fuel within section 277 and is also liable to forfeiture.

Speed-Up of Glasgow Buses

SPEACOP of Glasgow Buses

SPEAKING shortly after the introduction of parking restrictions in the central area of Glasgow last week, Mr. E. R. L. Fitzpayne, general manager of Glasgow Corporation Transport Department, said that buses had been able to run to schedule because of the freer flow of traffic. That was something the department had not been able to do for a long time because of traffic congestion. A bus could now travel across the city from the Sauchiehall Street junction of West Nile Street to Trongate at an average speed, including stops, of about 12 m.p.h. about 12 m.p.h.

NALGO Issues an Open Letter

CONTINUING its campaign for official recognition as a union representative of administrative and clerical staff in provincial bus companies, the National and Local Government Officers Association (NALGO) is aiming its shafts at Mr. D. M. Sinclair, general manager of the Birmingham and Midland Motor Omnibus Co., Limited. Mr. Sinclair read a paper on labour relations in industry during the last session of the Institute of Transport. In its official journal this month NALGO says it agrees with practically every sentiment expressed In its official journal this month NALGO says it agrees with practically every sentiment expressed in that paper, but why (asks the editor) do the precepts voiced therein differ so markedly from practice in the B.M.M.O. company?
"Since the beginning of this century" (wrote Mr. Sinclair) "there has been a steady improvement in relationships between employers and the unions

. much has been done to create machinery . . . to resolve differences—and this process will, and must go on." In B.M.M.O. the process that "must go on" has not yet begun in relation to NALGO, is the comment. The Association claims that it commenced recruiting administrative and clerical staff of B.M.M.O. in 1949 and two years later was representing some 900, or 70 per cent, of the total staff, but the company has persistently refused to recognise it or to negotiate with it salaries or conditions of service of these employees. The latter are members of no other trade union, it is stated.

Bus and Coach Developments

Bus and Coach Developments

Two test rigs for Routemaster bus running units are being operated in London by the L.T.E. They are fitted with large cabs for observers and equipment and the rear end is protected from the weather by tarpaulin. There is a possibility that some RI-type buses at present surplus to requirements may be used to accelerate the trolleybus replacement programme.

Coras Iompair Eireann has issued an advance programme for its 1959 tours. New features in the programme are 15-day air-coach tour, a six-day tour of Northern and North Western Ireland, seven-day tours of the west, south and east, and an eight-day tour of the north and west. The frequency of the two-day tours from Shannon Airport will be doubled and they will operate daily from May at to September 27.

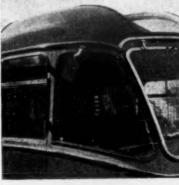
The second stage of the winter schedules for London Transport Country Bus services took effect on October 29. The withdrawals and curtailments indicated in Modern Transport Country Bus services took effect on October 29. The withdrawals and curtailments indicated in Modern Transport August 2 took effect together with certain others. These included daily withdrawal of the Ripley-Ockham section of 415 and the Swanley Junction-Crockenhill section of 423. On Sundays 448 has been withdrawn between Peaslake and Ewhurst and 4486 (Guildford-Pewley Way). The disappearance of Sunday service 407a (Horton Kirby-Dartford (Bow Arrow Lane) had been foreshadowed but not the fact that Bow Arrow Lane) had been foreshadowed but not the fact that Bow Arrow Lane would be served on Sunday afternoons by 499, previously a weekdays only service. Service 84 (Orpington Station-Chelsfield Station circular) has been modified to work between Chelsfield Station and Ramsden Estate (Petton Grove) via Warren Road, Sevenoaks Road, Var Memorial, Orpington Station-Chelsfield Station and Ramsden Estate (Petton Grove) via Warren Road, Sevenoaks Road, Var Memorial, Orpington Station, War Memorial, Spur Road and Tintagel Road. Oneman RF-type buses have taken over Routes 412





'Perspex' is a good traveller

These photographs show curved roof canopies, curved rear win-dows and internally illuminated name plate and weatherguards made from 'Perspex' in a coach built by Duple Motor Bodies Ltd. The hinged roof ventilators are made from 'Perspex' by Weathershields Limited.

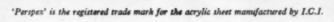




COACHES built by Duple Motor Bodies Limited contain a lot of 'Perspex' acrylic sheet. 'Perspex' is used for weather protection guards, roof canopies, hinged roof ventilators, engraved name plates and internally illuminated name plates, finger plates on

'Perspex' owes its versatility to a number of outstanding features: above all, it is a material with which designers can effectively combine function and good looks. In addition, 'Perspex' stands up well to all kinds of weather without losing its attractiveness and is unaffected by atmospheric changes. It is long lasting, strong and shatterproof. It has a high light transmission and is easy to clean and maintain. It is light in weight, an important consideration where so much is being used. Finally, when used for signs, 'Perspex' can be internally illuminated so that names can be seen as clearly by night as by day.

'Perspex' is available in a wide range of gay, pleasing, transparent, translucent and opaque colours as well as in clear and opal sheet.





RETIRED RAILWAY **OFFICERS**

Autumn Luncheon

THE autumn luncheon of the Retired Railway THE autumn luncheon of the Retired Railway Officers' Society was held in London on November 4, with Mr. H. G. Rampling, president, in the chair. He felicitously proposed "Our Guests," pointing out that the occasion afforded an opportunity for the "old boys" of the railway service to meet their erstwhile colleagues and former bosses. He welcomed Mr. H. A. Watkinson, the Minister of Transport, Sir Brian Robertson, chairman of B.T.C., Sir John Elliot, chairman of L.T.E., two former chairmen in Sir Robert Burrows and Sir Eric Gore Browne and three of the present general managers, who had three of the present general managers, who had their best wishes in challenging times.

In reply, Mr. Watkinson said the Society's quotation from Johnson, "A man, sir, should keep his friendship in constant repair" was perhaps easier to carry out than keeping B.R. in constant repair. Railway modernisation was a race against the C-licensee and the new road programmes. Arguments on nationalisation had little relevance to railway difficulties; but it would have been better if modernisation had begun in the late forties rather than the middle fifties. The Government intended to go through with modernisation and make a success of it; the difficulties should make them go more quickly for the more profitable parts of the

Mr. David Blee, general manager, London Midland Region, proposing the Society, said a sense of interdependence ripened into lasting friendship between railway officers; what a tragedy it would be if such friendships had to cease with would be if such friendships had to cease with retirement. There was deep harmony despite company competition, emulation between regions and departmental rivalries. In his response, Mr. George Morton said the R.R.O.S. was really a device for renewing their youth,

Mr. Edgar Hunt proposed "The President" which

was carried with acclamation.



FREIGHT TRANSPORT **EXHIBITION**

Facilities of B.T.C. Undertakings

EMPHASIS ON DOOR-TO-DOOR OPERATION

A FREIGHT transport exhibition at Battersea Wharf, London, illustrating some of the equipment used in freight services of British Railways and British Road Services, and officially opened by Mr. Harold Watkinson, Minister of Transport, on Thursday of last week, was arranged by the British Transport Commission to give visitors an opportunity to see a selection of the modern equipment used and to give them some idea of developments which are taking place—including some which are yet to come—in the nation-wide freight services offered. It was largely attended by Members of Parliament, representatives of trade and industry and also by interested members of the general public, to whom it was open for five days. FREIGHT transport exhibition at Battersea

Main Exhibits

The exhibition comprised nearly 60 main exhibits, including the Penman apparatus for quickly transferring containers between rail and road vehicles; the Dowty automatic coupler for

siding. The containers have pull-out metal skids near each corner and, as the vehicle moves between the raised rails, the rollers engage with the inclined sections at the rail ends, and the container is raised from the vehicle. A hinged flap under the container engages with a batten on the floor of the rail or road vehicle to which it is being transferred, and again by the motion of the vehicle the container is pushed along the rails and down the inclined sections, to settle gently on the lorry or rail wagon. With this system cost of transfer is low. The equipment is robust and the mechanics are simple.

Another method of transferring containers from one vehicle to another is by the heavy-duty fork-lift truck. In co-operation with the manufacturer, Shelvoke and Drewry, British Railways has developed its own Freightlifter fork truck. It can lift over 8 tons as a fork-lift, can be converted into a mobile crane capable of lifting 6½ tons and, with a lifting frame, can handle containers of up to 7½ tons in weight. It can also be converted siding. The containers have pull-out metal skids





The Dowty automatic coupler in the uncoupled and coupled positions; it deals also with the brake pipe and can be locked out of position to couple with vehicles not so equipped

railway wagons; and representative vehicles of the British Road Services fleet which ranges from the ubiquitous parcels van to a rigid lorry which can carry over 16 tons, an articulated vehicle which, with a payload of 15½ tons, has a maximum gross weight of 24 tons, and a 24-wheeled trailer designed for indivisible loads of up to 200 tons. There were a British Railways 1,250-h.p. main-line diesel locomotive, and a diesel shunting locomotive. Among wagons were the 56-ton iron-ore hopper wagon, a bulk material vehicle which is unloaded pneumatically, pallet vans, international railway transport vehicles, a car-carrier, and a wagon for transporting electric transformers of up to 135 tons in weight. Vehicles of the British Railways road collection and delivery fleet were also on view.

There were also examples of almost every type of container, including a 4-ton collapsible type by
the T.I. group. They ranged from 70 to
1,200 cu. ft. in capacity and included types
adaptable, or designed for, almost every commodity, from meat and frozen foods to bricks and Pallets for making unit loads; the Tote

into a "searcher" crane for removing articles weighing up to a ton from the corners of covered wagons. It has alternative driving positions and can be driven on the road. Some 50 of these Freightlifters are now in use in British Transport freight services.

Also designed with the door-to-door transport of unit loads in mind is the B.R.S. Tripad, recently described and illustrated in our columns. A standard eight-wheeled B.R.S. lorry has been equipped with a 24-ft. platform body made in three demountable sections. Each section is interchangeable, permitting individual sections to be lifted off and replaced by the heavy fork-lift truck at intermediate points en route or at terminals.

The "Freight Liner"

Similar in concept, but planned for the express transport of containers by rail, is the Freight Liner train—of which two wagons with containers were shown. This is shortly to be tried out in an entirely new experimental service and consists of a number of flat-topped wagons permanently coupled together. The Freight Liner will run to



Tractor moving containers off railway wagons on to Penman exchange equipment; right, lorry backing under ramp to pick up containers; below, the T.I. collapsible container erected by crane and, right, shut down for return as an empty

bins which fit into a specially designed wagon, for transporting free-flowing solids; and Collico col-lapsible metal boxes which solve the problem of packing for small articles were among the exhibits. Mechanical handling equipment of several types, including the Shelvoke and Drewry Freightlifter of British Railways, was also on view. Operating demonstrations and film shows took place at intervals during the period of the exhibition.

Door-to-Door Transport

There is nothing made, manufactured or mined, that is capable of being moved which cannot be carried by the freight services offered by British Railways and British Road Services. The railway Railways and British Road Services. The railway wagon stock comprises nearly 1,090.000 wagons, with a capacity of almost 16 million tons, and British Road Services has over 16,000 vehicles which can lift more than 180,000 tons. The vital speedy and safe transfer of containers between road and rail vehicles was demonstrated by cranes, fork-lifts and by the new Penman device, which by the motion of the rail or road vehicle, lifts the container from one on to the other. The Penman ramp, developed from a well-known arrangement for exchanging road vehicle bodies, makes a simple but efficient system of ofloading or loading containers and is being tried out by British Railways. It consists of two raised rails with inclined sections at either end which are positioned one at each side of a railway which are positioned one at each side of a railway

a regular timetable between main centres and will have the regularity, and very nearly the speed, of an express passenger train. Freightlifters or cranes will remove or load containers at stopping

of an express passenger train. Freightlifters or cranes will remove or load containers at stopping places. Despite the wide use of containers there are times when they have to be moved to another point for reloading. British Railways is experimenting with a new, large lightweight metal container which, when empty, can be folded within its own dimensions. It will be particularly advantageous where empty journeys by sea are involved and advantage will be gained in low rates.

This is but one of the numerous types of containers available. There are now over 44,000 containers in service on British Railways alone, and thousands more are being produced. They vary from what is virtually an open box, adaptable for the conveyance of a wide variety of goods, to specialised highly insulated types for ice-cream and quick-frozen foods. Their sizes range from the large B.R.S. container, 24 ft. long, to a B.R. small S.W. type wheeled container that can be pushed by hand. For general merchandise British Railways has over 17,000 of the A and BD types with a capacity of 329 and 724 cu. ft. respectively. Both types have end doors, while unloading or loading of the BD type is facilitated by side doors also. These types can be modified with internal fittings, racks, shelves and hanging bars, and can be adapted for almost any com-



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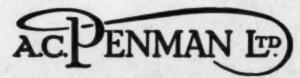
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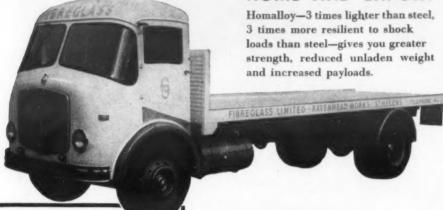
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LATEST NEW YORK BUSES

Aircraft Lounge-Type Seating

IN an effort to regain some of the passengers which all American mass transport companies which all American mass transport companies have lost in the past 10 years, Fifth Avenue Coach Lines has just placed in service 40 new vehicles which, it claims, give the most comfortable bus ride in the world. They are the result of more than five years of research by the company's engineers and designers, but are on General Motors chassis. They bring the Fifth Avenue Coach Lines fleet to 1282 fleet to 1,282

New York Working Losses

Faced with operating losses totalling nearly \$520,000 for the first half of 1958, these new vehicles, costing over a million dollars, give evidence of the faith of the company in the future of mass transport in New York City. They incorporate several novel features, such as air

Numbered 2605 to 2644 the new buses are 8 ft. wide and 39 ft. 9 in. long, with a 23 ft. 5½ in. wheelbase. There are seats for 45 passengers and 23 standing passengers are authorised. The tyres are 11.00 by 20 all round, with twins at the rear. The loaded weight with driver (69 persons at 150 lb.) is 30,050 lb.; unladen weights are 5,840 lb. (front) and 13,860 lb. (rear). The overall height is 9 ft. 6 13/16 in. and the headroom in the gangway 6 ft. 6 3/16 in. The gangway is 1 ft. 8 in. wide and the pitch between seat backs in the transverse seating 2 ft. 5 in. The front and centre doors are both 2 ft. 6 in. wide, but the front door is 6 ft. 6 in. high whereas in the centre exit 6 ft. 6½ in. is allowed. The front step height is 1 ft. 3 in., but the centre step is 1 ft. 3½ in. above the road.

The six-cylinder engine is the 671E, of 426 cu.



Exterior and interior views of the General Motors buses in service in New York with Fifth Avenue Coach Lines

suspension, aircraft lounge-type seating, with metal arm-rests, at the rear, and fluorescent lighting which is not only flickerless but, thanks to a revolutionary new design of electrical circuit, gives revolutionary new design of electrical circuit, gives six times more light than any other on record in the United States. In addition, passengers are given moulded foam-rubber saddle seats, on pedestal supports, 3 in. more leg-room, wider aisles paved with non-slip ribbed rubber, and "push-to-open" exit doors which they can operate themselves.

Eye Appeal

Eye Appeal

The interior colour scheme of sea green and pearl grey has been carefully designed to give maximum eye-appeal. The aircraft lounge-type seating for 17 passengers in the rear was deliberately planned to attract passengers to pass down the bus. The vehicle is insulated throughout against noise. For the first time, a special compartment has been provided for the driver, by means of a light metal gate, elbow high, while his space is painted in dark colours to reduce glare and windscreen reflection.

in. capacity, with 4½ in. by 5 in. cylinders and is of 43.35 nominal h.p. Auxiliary equipment includes a 12 cu. ft. compressor and a 215-amp. generator. There is an 80-gal. fuel tank and the water capacity of the engine and Thermotank heater is 18 gal. There are two 12-volt batteries of 19 plates, giving 170 amp.-hr. capacity.

Metropolitan-Vickers Electrical Co., Limited, has recently added to the range of Metrovick electrodes the Speedivick 2, a high-grade contact electrode for the downhand welding of steel. The electrode coating has a high iron powder content, affording coating has a high fron powder content, affording two important advantages; the coating being elec-trically conductive, striking and restriking of the arc is greatly facilitated and the iron powder is deposited along with the core wire, giving much longer runs of welding per electrode. Metal recovery is approximately 135 per cent of the core weight compared with about 90 per cent for a standard rutile type electrode. The maximum welding currents of the Speedivick 2 are more than 20 per cent higher than for average electrodes.



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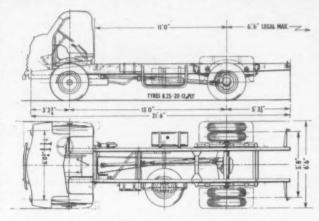
COMMERCIAL VEHICLE TEST

Bedford Diesel Dropside 7-Ton Lorry*

OUTSTANDING PERFORMANCE OF 5-LITRE ENGINE

OVER the years the S-type Bedford 7-ton chassis in its various forms, always high up on the list of best-selling British vehicles, has been the subject of a number of changes designed to increase its efficiency and economy of operation. In its latest form, fitted with a 300 cu. in. dieselongine and two-speed axle, both of Vauxhall Motors with the second of the sec own design and manufacture, it is undoubtedly a remarkably good vehicle that is bound to win even greater commercial success; its standards of perormance demonstrated recently over the Modern

high indeed.
Recent specification changes in the S-type Bedford have included the in troduction of a five-speed gear-box, with constant-mesh third and fourth gears and two standard power take-off open-ings, as an alternative to the four-speed syn-chromesh box on 6-ton chassis and general improvement of the brakes. Specifically brake changes include increases changes



Drawing showing principal dimensions of the Bedford SL1 long-wheelbase chassis

include increases of wheel cylinder diameter from 1.5 to 1.625 in. and of vacuum servo diameter from 4.33 to 5.25 in. Additionally, the rear shoe bisector wedge angle has been increased from 13.5 to 17 deg., the stroke of the tandem master cylinder and the brake pedal stem have been lengthened to allow for greater fluid displacement of the larger wheel cylinders and both from braked your wall thickness. cylinders and both front brakedrum wall thickness

than at home, the standardisation of the two-speed axle in the 300 cu. in. diesel-powered 7-ton chassis (a single-speed axle is standard in petrol- and Leyland O350 diesel-engined vehicles) is wise. With the four-speed gearbox and two-speed axle, the laden vehicle has a range of performance from ability to restart on a gradient steeper than r in 4 to a top speed, with the normal run up of the pneumatic governor, of well over 50 m.p.h.

The general Bedford chassis design is too well known to require much comment. It is of course available with

available with various wheelbase lengths to suit lorry, tip-per and tractor applications and with numerous optional extra fittings. The long - wheelbase (13 ft.) forward control chassis permits a maxi-m u m b o d y length in the United Kingdom of 17 ft. 4 in. and, with the 300 cu. in. diesel engine and com-plete with standard pressed-steel cab, has a licensing weight of 2 tons 14% cwt. This leaves an allowance of

allowance of 7 tons 10\frac{1}{2} cwt. for running equipment (spare wheel, fuel, water and so on), body and payload within the recommended maximum laden weight of 10 tons 5\frac{1}{2} cwt. For operation under favourable conditions and where it does not involve infringement of local tyre- and axle-loading regulations, the SLI (S=S-type, L=long chassis, I=300 cu. in. diesel engine) is cleared for a maximum

Test Result

ROUIE: Standard route in Kent and Surrey with additions. CONDITIONS: Cool and mainly fine. RUNNING WEIGHT: 10 tons 5½ cwt. (10,440 kg.) plus crew of

PAYLOAD: 6 tons 194 cwt. (7,087 kg.).

FUEL CONSUMPTION: Continuous running on undulating route 192 m.p.g. (69 km. per litre) at 26 m.p.h. (41.5 k.p.h.) average speed.

average speed.

Gross Ton/M.P.G.: 199-7 (71-8 tonnes/km./litre).

PAYLOAD TON/M.P.G.: 133-9 (48-2 tonnes/km./litre).

MAXIMUM GRADIENT CLIMBED: 1 in 5 (20 per cent).

TURNING CIRCLE: 51 ft. (15-5 m.) wheeltrack, 54 ft. (16-5 m.)

Sweep.

ADJUSTMENTS DURING TEST: None.

ACCELERATION:

Averages of four runs. through gears:

OJUSTMENTS DURING TEST: None.

CELERATION:
Averages of four runs, through gears:

-0-20 m.p.h. 174 sec.

-0-30 m.p.h. 26 sec.
In direct drive (low axle ratio):
10-30 m.p.h. 14 sec.
10-30 m.p.h. 14 sec.
10-30 m.p.h. 30 sec.

RAKING: Average measured distance from 30 m.p.h. in emergency stops on dry tarmac surface 53 ft., equivalent to 18-3 ft. per sec. per sec. or 0.7 g. overall retardation; Tagley meter 60-68 per cent. Handbrake only from about 20 m.p.h. up to 40 per cent.

HIMATED TOP SPEED: Over 50 m.p.h. (80 k.p.h.).

FERALL FUEL CONSUMPTION: For 86 miles of hard driving, including 25 miles in London suburbs and numerous stops in various tests 12-7 m.p.g. (450 km. per 100 litres).

TEST RESULTS AT A GLANCE

Vehicle Details

Maker: Vauxhall Motors, Limited, Luton, Beds

Maker: Vauxhall Motors, Limited, Luton, Beds.

Type: Bedford SLDr 7-ton dropside lorry.

Engine: Bedford six-cylinder direct-injection diesel; bore 3:875
in. (98:42 mm.), stroke 4:25 in. (107:95 mm.), capacity
300.7 cu. in. (4:927 litres); compression ratio 17 to 1,
gross bh.p. 97 at 2,800 r.p.m., gross torque 217 lb./ft.
at 1,400 r.p.m.

Transmission: Clutch, Borg and Beck single dryplate 12 in.
(303 mm.) dia. 136 sq. in. (871 sq. cm.) lining area; gearbox
four-speed synchromesh (except first) ratios 7:059, 3:32,
1-711 and 1 to 1 forward, 7:059 to 1 reverse; driveshaft,
Hardy Spicer two-piece open tubular with needle roller
bearing universal joints and flexibly mounted centre bearing; rear sake, Bedford fully floating hypoid two-speed with
two-way vacuum gearchange, ratios 5:83 and 7:9 to 1
standard, 6:4 and 8:72 to 1 optional.

Brakes: Lockheed tandem hydraulic operation of leadingtrailing shoes with Clayton Dewandre 5:1-in. vacuum servo
assistance; total lining area 4:98 sq. in. (3,216 sq. cm.).

Tyres: 8:25-20 12-ply standard, same size 14-ply or 9:00-20
12-ply optional.

Wheelbase: 1:3 ft. (3:962 m.).

Weedly: Chassis-cab in taxation trim 2 tons 1:3 cwt. (2,730:6

WEIGHT: Chassis-cab in taxation trim 2 tons 13½ cwt. (2,730-6 kg.); complete dropside lorry in kerb trim 3 tons 6 cwt. (3,353 kg.). PRICE: Chassis-cab £1,248, complete dropside lorry in primer £1,358, plus £274 3m. 4d. U.K. purchase tax in each case.

and overall brake size have been increased. On

gross weight of 23,000 lb. (10 tons 14 cwt.) Fitted with a 16-ft. works-built dropside body (SLD1),

7-ton chassis the total lining area is now 498 sq. in., giving a specific lining area of nearly 49 sq. in. per ton of recommended maximum gross laden

weight.
The total effect of the changes has been to The total effect of the changes has been to increase the share of the work done by the front brakes and to give a distribution of braking effort of roughly 40 per cent front and 60 per cent rear. To compensate for the loss of mechanical efficiency due to the greater wedge angle of the rear shoe bisectors, the handbrake linkage has also been modified. Moulded brake linkage has also been modified characteristics have been standard on Bedford commercial vehicles for some time.

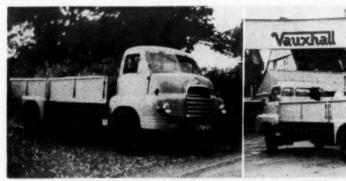
Bedford Diesel

The Bedford 300 cu. in. six-cylinder diesel engine has been fully described in our columns and needs no introduction. It follows the now-classic general

the 7-tonner has a running tare of 3 tons 6 cwt.

Good Weight Distribution

Among the optional equipment available at extra cost are chassis-frame flitch plates, rear shock absorbers (front dampers and rear helper springs are standard), three-piece wheels, two-man passenger seat, power-assisted steering, cab heater-demister and higher-duty tyres than the standard 8.25-20 12-ply items. Provision is also made for fitment of the new Bedford radio which was announced three weeks ago by Vauxhall Motors, Limited, the first commercial vehicle manufacturer to market its own sets. Standard cab features include two-piece windscreen with hinged driver's include two-piece windscreen with hinged driver's panel, grouped instruments directly ahead of the driver, twin two-speed windscreen wipers, sliding full-drop windows in the doors, removable engine



Good lock and easy controls enable the vehicle to be manoeuvred into the most unlikely places; right, Roundabout Garage of Grand Garages (Richmond), Limited, makes a most convenient starting and finishing point because of its diesel fuel pump and proximity to the Great Chertsey Road, where acceleration and brake tests are carried out

design established for the British high-speed light-cowl and radiator grille permitting withdrawal of weight direct-injection automotive diesel engine the engine without removing the cab and doublewhich provides high performance with outstanding economy over a wide speed range, easy starting and great reliability and durability. In the Bedford design, from a displacement of 300.7 cu. in. (4.92 litres) net (installed) output is 89 b.h.p. at 2,600 r.p.m. and 211 lb./ft. torque at 1,400 r.p.m. Although the torque peak occurs at the fairly high speed of 1,400 r.p.m., the torque curve is commendably flat and a net output of 200 lb./ft. or more is available over the engine speed range 700

Bearing in mind the popularity of the Bedford in countries where operating conditions can be both more arduous and permissive of higher speeds

skinned insulated engine cover.

The test vehicle, which had already covered nearly 9,000 miles when we started our trials, was evenly with concrete blocks to bring weight to 10 tons 5½ cwt., to which was added the weight of the crew of two. A weighbridge check showed that 3 tons 10 cwt. was borne by the front showed that 3 tons 10 cwt. was borne by the front axle, indicating a fairly equitable apportionment between front and rear tyres. Immediate impressions on taking over the controls were the greater comfort and better support provided by the new interior-spring seating and a renewal of the appreciation always felt of the general lightness of control achieved in this 7-tonner. The vehicle was fitted with the optional two-man passenger seat, (Continued on page 10)



The fortunate citizens of Edinburgh are in luck again! The City Transport Department follows up their investment in Leyland new-style 'Titan' double-deckers by placing an order for fifty 44-seater 'Tiger Cub' single-deckers. Although based on the design that has put this popular bus way out ahead all over the world, there are some important variations. Power has been stepped up by installing a 110 h.p. underfloor diesel in place of the standard 100 h.p. unit. The well-known Pneumo-Cyclic gearbox (2-pedal control) is coupled with a centrifugal clutch. Automatic chassis lubrication is also an important feature. The bodies will have driver-controlled front doors operated by compressed air, leaving conductor free for fare duties. leaving conductor free for fare duties

These 'Tiger Cubs' are earmarked for city work where they will doubtless follow their usual practice of slicing normal costings pretty drastically . . . and operating with impeccable reliability!



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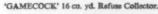
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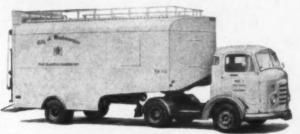








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NEWS FROM ALL QUARTERS

Station Closes

The Western Region announces that the passen-withdrawn from West ger train service was withdrawn from West Wycombe Station on and from November 3 and the station closed.

Bridging of Whittlesford Level Crossing

Work is to commence on a diversion of the Luton—Newmarket road, A505, at Whittlesford, about eight miles south of Cambridge, with a bridge over the railway and the River Cam. The existing road crosses the railway on the level, and the gates are closed to road traffic 130 times a day for a total period of 10 in every 24 hours.

Withdrawal of Dublin Suburban Trains

Coras Iompair Eireann proposes to withdraw the train service between Harcourt Street, Dublin, and Bray after December 31. Recently only suburban trains have used Harcourt Street, the daily main line train has been diverted to Westland Row. There are at present 23 trains in each direction on Mondays to Fridays and 21 each way on Saturdays and passengers average 1,000 a day. Stations which would be closed, apart from Harcourt Street, are: Ranelagh, Milltown, Dundrum, Stillorgan, Foxrock, Carrickmines and Shankill. XX.

More Diesel Trains for Cambridge Area

This week saw the start of the second stage of dieselisation within the Cambridge traffic area of the Eastern Region. Two-car diesel sets replaced steam services on the Cambridge—March, March—Peterborough North, Ely—March, and March— Peterborough North, Ely—March, and March—Wisbech East—King's Lynn services. There are additional and improved services between Cambridge and Peterborough in both directions by through trains. This obviates a change at March. Services have also been planned to give improved connections at Peterborough North for the North of England and Scotland and at Peterborough East for the Midlands. To achieve these aims, some trains no longer call at Histon, Oakington, Long Stanton, Swavesey and Wimblington.

Transfer of Glasgow Power Station Pinkston generating station, which supplied electric traction current to the Corporation Transport Department, was formally handed over by Glasgow Corporation to the South of Scotland Electricity Board on October 31. This was in accordance with an agreement reached between the two parties some months ago and arises out of the diminishing traction power requirements of the Corporation because of the tramway abandonment programme. Speaking at the handing-over cereprogramme. Speaking at the handing-over ceremony, Mr. Myer Galpern, Lord Provost of Glasgow, said that they could not be accused of a short-sighted policy (i.e., in being placed in a position in which they had to negotiate the transfer of a financial burden); four years ago the majority party in Glasgow honestly believed that the trolleybus was the answer to the obsolete tramsay system, but when the trolleybus system had way system, but when the trolleybus system had been developed a little way "various complaints of passengers" poured in and they changed their view. Power supplies will continue to be drawn from Pinkston.

More 40 m.p.h. Roads in London Area

A further 24 miles of road in the London traffic area will be subjected to a 40 m.p.h. speed limit from February 14 next year, states the Ministry of Transport.

End of Industrial Disputes Tribunal

An order laid before Parliament by the Minister of Labour this week provides for the abolition of the Industrial Disputes Tribunal from March rest. No case may be referred to the Tribunal on or after December 10 this year.

First-Class Fare Reduction on Saturday

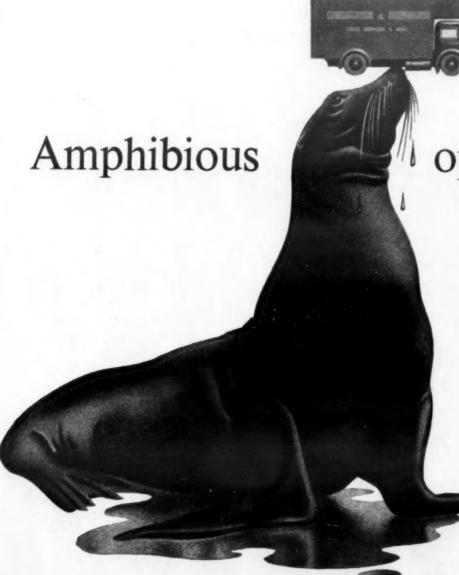
First-Class Fare Reduction on Saturday
First-class return fares on Saturdays are only
7s. 8d. more than the ordinary second-class fares
on trains to and from London (Euston and St.
Pancras) and Manchester (London Road and Central) as from November 1. There is normally little
first-class traffic between the two cities on Saturday. The first-class return ticket will be 69s.
(instead of 92s.), available by any train on Saturday only and for return the same day or on the
following Saturday. This special facility will days only and for retain the same day of the difference following Saturday. This special facility will operate only until April 25, 1959, except on December 20 and 27, and March 28 (the Saturday before Easter).

Underground Economies Opposed

Proposals for the curtailment of services and closure of stations on the London Underground have not met with approval from the Transport Users' Consultative Committee for the London area. The committee cannot accept the proposal that Underground services should commence a half-hour Underground services should commence a hair-hour later and finish a half-hour earlier—it would have "very serious repercussions on the industrial and social life of London as a capital city." The committee suggests that the proposed closure of the Aldwych branch should be deferred for 12 months; closure of the South Acton branch should be referred back to London Transport; the need for legaling Mornington Crescent Station ones has for keeping Mornington Crescent Station open has been "fully established." These recommendations are subject to the approval of the Central Transport Consultative Committee, to which they go on November 25.

10(8)01

More London Street Improvements A list of street improvements in Central London was announced by the London County Council last week. Major schemes, each estimated to cost over £500,000, are: a new road with a flyover between Harrow Road and Marylebone Road; widening of Finchley Road; the extension of Western Avenue for a short distance from Wood Lane across the Central Line and West London Railway to Latimer Road, North Kensington. This would enormously improve user of the inner end of Western Avenue. Also included are the improvement of Gardiner's Corner, Aldgate; improvement, including a roundabout, of the Old Street and City Road intersection; and improvement of Euston Road from Albany Street to Gower Street. i.e., including the Tottenham Court Road intersection. There are also seven minor schemes, each costing less than £500,000, which include improvement of the north side of Piccadilly Circus and widening of High Holborn.



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COMMERCIAL AVIATION

Airlines and Agents

AIR CEYLON PROBLEMS

SCHEDULED international airlines have concluded that the small profit margins of their own operations make an increase in the rate of agency commissions impossible at this time. The conclusion was reached in the International Air Transport Association traffic conferences which have just been held at Cannes and was communihave just been held at Cannes and was communicated to the International Consultative Council of Travel Agents. Mr. John Brancker, traffic director of I.A.T.A., said that after lengthy and sympathetic consideration of increased commission rates, the airlines were forced to conclude that the earnings of the agency trade, like those of the airlines, must be expanded by larger volume of sales, rather than by increased unit returns. The airlines themselves were trying hard and effectively to make air transport a more attractive and saleable make air transport a more attractive and saleable product, he added.

Bagle Suspends Copenhagen Service

Owing to a marked decline in the bookings for its Manchester—Hamburg—Copenhagen service as winter approaches, Eagle Airways has announced suspension of its operation. The last flight was scheduled for October 31.

Cantor Lectures on the Aeroplane

Cantor Lectures on the Aeroplane
Three Cantor lectures to be given in the current
session of the Royal Society of Arts will have as
their subject "The Aeroplane." On November 24
Mr. C. H. Gibbs-Smith will speak to the title "The
Birth of the Aeroplane." On the following Monday (December 1) Mr. Peter W. Brooks, technical
assistant to the chairman, British European Airways, will speak on "The Development of the
Aeroplane," and on December 8 Mr. Eric Mensforth, chairman, Westland Aircraft, Limited, has
as his subject "The Future of the Aeroplane." Each
lecture will be at 6 p.m.

K.L.M. Share in Air Ceylon to be Reduced

K.L.M. Share in Air Ceylon to be Reduced K.L.M. (Royal Dutch Airlines) has agreed to a substantial reduction of its shareholding in the Air Ceylon International service. At present K.L.M. holds 49 per cent and Air Ceylon 51 per cent of the shares. In view of objections raised by certain countries about traffic for Air Ceylon International on the ground that Ceylon does not own enough shares to consider the service as a Ceylonese venture, the Minister of Transport, Mr. Maitripala Senanayake, has recommended to the Government that the shareholding of K.L.M. should be reduced to 26 per cent. The Government will, therefore, that the shareholding of K.D.M. should be reduced to 26 per cent. The Government will, therefore, soon own 74 per cent of the shares. Meanwhile, Air Ceylon International will shortly expand its service considerably. The managing director of Air Ceylon, Mr. J. L. M. Fernando, has recently hinted plainly to the Ceylon Government that there is a need for new equipment for its services.

August Traffic by British Airlines

It is provisionally estimated from statistical returns received to date that United Kingdom airlines' traffic on scheduled and inclusive tour services amounted to 41.5 million short ton-miles in August. This represented an increase of 12 per cent over August last year. Capacity operated increased by 17 per cent to 65.2 million capacity ton-miles and the overall load factor fell from 66 to 64 per cent. These and corresponding provisional figures for June and July are given in the following table:

Capacity short ton-miles							Increase over 19:			
	June July August	::		58.0 62.3 55.8				+17 +16 +17		
	Load short to June July August	on-mile		34.5 39.4 41.5	million million	**	**	+11 +12		
	Overall load	factor	(per	cens)	1958			1957		
	June July August	**		::	60 63 64	**	**	66 66		

Modern Terminal for Jesselton

Tenders have been invited for the construction of a modern terminal building at Jesselton Airfield, of a modern terminal building at Jesselton Airfield, according to Mr. L. Jackson, the North Borneo Director of Public Works. Apart from waiting rooms, lounges and a customs hall, it will accommodate offices of airline companies and house the headquarters of the Civil Aviation Department of the three British Borneo territories. Construction of the new runway at Jesselton had proceeded according to plan and it should be completely ready for use at the end of next February. The runway, with a bituminous pavement of crushed coral and stone bases, would take aircraft up to Dakota standard in all types of weather. Mr. A. R. Wilkey, financial secretary, said in the Legislative Council that the estimate of \$(Malayan) 1,700,000 for the reconstruction of Jesselton Airfield could now be reduced by \$250,000. This \$250,000 would be used to strengthen weak areas of the parking apron at the Labuan international airport and to seal the the Labuan international airport and to seal the whole of the apron and taxi-track. During 1957, ne said, weaknesses to the structure of the parking apron at Labuan became apparent when a York aircraft bogged down after the surface of the apron had collapsed. Since then, large areas of parking apron had been found to be unsafe for heavy aircraft.

Opening of I.A.L. School

The International Aeradio air traffic control school at the I.A.L. premises at Southall, Middleschool at the I.A.L. premises at Southall, Middlesex, was officially opened on October 29 by Air Commodore W. E. G. Mann, Director-General, Civil Aviation Navigation Services Group, Ministry of Transport. The school, which is believed to be the only privately-owned A.T.C. school in the world, will provide training in all aspects of air traffic control and will have similar syllabi to the courses run by the Ministry. While basically designed for training the company's own staff, a few places on all courses may be available to private individuals and outside organisations who are interested in taking advantage of it. All available places on the first course have been filled, seven by I.A.L. staff and five by private individuals. The first course is in aerodrome and approach control and is designed for students who have already attained a general standard of education and who have a basic knowledge of aviation. International Aeradio mans and operates facilities including air traffic control centres and aerodrome and approach control at over a stations in accountrie throughout the centres and aerodrome and approach control at over 35 stations in 30 countries throughout the world. Besides theoretical instruction in the normal subjects such as air traffic control theory, air navigation, meteorology, telecommunications and radio aids, etc., a third of the available time will be spent on practical training on an I.A.L. air traffic control synthetic trainer.

L.M.R. MECHANICAL AND ELECTRICAL ENGINEER



Mr. A. E. ROBSON, M.B.E., M.I.Mech.E.

As already recorded in Modern Transport, Mr. Alfred Eric Robson assumed the post of chief mechanical and electrical engineer, London Midland Region, British Railways, as from October 1, following the appointment of Mr. J. F. Harrison as chief mechanical engineer, British Railways. Mr. Robson served a privileged apprenticeship in the Derby carriage and wagon works of the London Midland and Scottish Railway from 1925 to 1930 and thereafter had several years' drawing office and general works experience before his appointment as progress assistant to the works superintendent in 1936. When, two years later, the L.M.S. undertook the production of aircraft components in its Derby shops he was put in charge of the development of that project. In 1942 he was made assistant works superintendent, Derby carriage and wagon works, retaining direct responsibility for the considerable aircraft production and repair work then being carried out. For his work in this field Mr. Robson was made an M.B.E. in 1945. In that year also he became assistant locomotive works superintendent at Derby and in the following March he was appointed locomotive works superintendent. Then, in 1948, he became principal assistant (carriage and wagon) to the chief mechanical engineer, Derby, and following upon the creation in 1949 of the post of carriage and wagon engineer, Eastern and North Eastern Regions, he received that appointment. In March, 1953, he became acting chief officer (carriage and wagon construction and maintenance), Railway Executive. After the reorganisation of British Railways headquarters, he became in January, 1955, chief carriage and wagon engineering officer, British Railways Central Staff, from which post he took up his present position.

RAILWAY ACCIDENTS

Report for 1957

CASUALTIES INCREASED

THE number of train accidents on British Railways during 1957 was 1,205, a decrease of 1.7 per cent on the figure of 1,226 for 1956, states Brigadier C. A. Langley, Chief Inspecting Officer of Railways, in his annual report to the Minister of Transport, published on Thursday of this week. The general trend shows remarkably little variation since 1942, the average

report to the Minister of Transport, published on Thursday of this week. The general trend shows remarkably little variation since 1947, the average for the last 10 years (1948-57) being also 1,205. The number of passenger train collisions and derailments was affected at 103, compared with 120 for 1956 and the average of 128 for 1951-55. There was, however, a large increase in the number of train accident casualties, which rose to 1,074 (112 killed, 962 injured) compared with 608 (18 killed, 590 injured) in 1956 and the 1951-55 average of 940 (62 killed, 878 injured). The serious collision at St. John's, Lewisham, accounted for 90 killed and 176 injured.

The total fatalities in all movement by rail, i.e. train and movement accidents, was 320 (0.7 per million train-miles) compared with 237 for 1956 and the average of 295 for 1951-55. Of these fatalities 112 occurred in 19 train accidents and, as already stated, they included 90 killed at St. John's, Lewisham; of the remainder, 15 were occupants of road vehicles at level crossings. The 149 serious injuries in train accidents compared with 27 in 1956 and 165 in 1955. The figure of 320 fatalities quoted above included 208 movement accident fatalities, 11 fewer than in 1956. Fatalities to railway servants in these accidents increased by three to 147, and the serious injuries were 58 more at 517.

Primary Causes

Analysis of primary causes of train accidents shows the number which were attributable to want of care or irregularities by the operating shows the number which were attributable to want of care or irregularities by the operating staff fell by nearly 3 per cent to 621, representing 51.5 per cent of the total compared with 640 (52.2 per cent) in 1956 and an average of 573 (47.7 per cent) for 1951-55. The number of accidents directly caused by human failure shows a slight decrease, after rising fairly steadily from 1950, when the figure was 518 (44.8 per cent) to the 1956 total of 640.

There was a satisfactory decrease in the number of collisions and derallments for which signalmen were primarily responsible, and although none was sufficiently serious to warrant a formal inquiry a number was investigated in detail with the regional officers. The number for the year was 38, which included 10 cases of irregular block working. Comparative figures were 50 (14) in 1956 and an average of 41 (12) for 1951-55.

Failures by ground operating staff other than signalmen resulted in 76 collisions and derailments compared with 84 in 1956 and the average of 62 for 1951-55. The 53 collisions and derailments, caused by the combined failure of train crews and/or signalmen and/or other staff, compared with 40 in 1956 and the average of 62 for 1951-55.

crews and/or signalmen and/or other staff, compared with 49 in 1956 and the average of 63 for 1951-55. Accidents caused by the faulty loading of goods rose to 17 compared with 12 in 1956 and an average of 16 for 1951-55.

Train Crews

The number of accidents caused by errors of train crews dropped slightly to 310, compared with 313 for 1956, but it was still 18 per cent higher than the 1951-55 average of 262. Collisions and derailments so caused numbered 233, lisions and derailments so caused numbered 233, as against 238 in 1956 and the average of 200 for 1951-55. The higher numbers in comparison with those from signalmen's errors reflect the different character of the work, in which safety depends almost entirely on personal attention to duty, and there are few mechanical or electrical aids which can be provided to assist the crews in their work.

Accident resulting from passing signals at dances. can be provided to assist the crews in their work. Accidents resulting from passing signals at danger were only 35, which was two less than in 1956 and 24 less than the average of 59 for 1951-55. Unfortunately there were included five serious collisions into which inquiries were held.

With the exception of that at Staines, these might have been prevented by automatic train control of the warning type. In addition, four other less serious accidents (making a total of

might have been prevented by automatic train control of the warning type. In addition, four other less serious accidents (making a total of eight of the 35 accidents caused by passing signals at danger) might have been so avoided. This system of warning control was finally approved by the Minister in November, 1956. The B.T.C. programme of installation indicates that by the end of 1959 the following high-speed lines will have been fitted: Euston—Stafford, 133 routemiles; Kings Cross—Newcastle, 268; Edinburgh—Glasgow, 47; Exeter—Salisbury, 88; and Bournemouth—Southampton, 32 miles. In subsequent years the rate of installation will be stepped up as experience is gained in manufacture and fitting.

Technical Defects

The number of accidents resulting from technical defects increased slightly to 128 from 124 in 1956, but they were still well below the average of 159 for 1951-55. The programme of permanent-way renewals was well up to the standard of previous years and 2,005 track-miles, excluding London Transport, were wholly or partially renewed, compared with 1,978 track-miles in 1956. As in 1956 there were 28 derailments due to track and signalling defects, compared with the average of 43 for 1951-55. The number of broken rails fell to a postwar low record of 198 compared with 234 for 1956 and an average of 352 for 1951-55. 234 for 1956 and an average of 352 for 1951-55. This steady decline reflects credit on the permanent way staff and emphasises the value of several years preventive research.
Summarising, the total of accidents caused by

Summarising, the total of accidents caused by failure of the operating staff and technical defects was 749, compared with 764 in 1956 and the average of 730 for 1951-55. The accidents due to the failure of the human element fell slightly to 621, compared with 640 in 1956, but the number is still more than for any of the preceding years since 1948. Accidents due to other causes also decreased from 462 to 456, but the numbers attributable to misconduct of the public again rose slightly to 267 compared with 265 in 1956 and the average of 194 for 1951-55. Again many of these accidents occurred when carriage doors, carelessly opened by passengers, were struck by carelessly opened by passengers, were struck by passing trains.

passing trains.

Misconduct of the public was also responsible for 53 collisions with road vehicles at level crossings compared with 58 in 1956 and the average of 53 for 1951-55. The great majority of these accidents were at private occupation and accommodation crossings, of which there are 19,701. There were 51 fires in passenger trains compared with 66 in 1956. They were mainly caused by sparks from steam engines.

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Bedford 7-Tonner on Test

(Continued from page 7)

which is thoughtfully provided with a wing on the inside of the squab to provide the inside passenger with shoulder support.

with shoulder support.

It was soon apparent that any doubts we might have harboured of the ability of this engine of under 5 litres capacity to deal adequately with a rol-ton load could be dispelled. Indeed, when intelligent use was made of the two-speed axle in conjunction with the normal synchromesh gearbox a positively scintillating performance was possible. In this connection a special word of praise for the Bedford two-speed axle is called for. It is operated by vacuum and differs from standard practice in that direct drive is through the higher axle ratio and that vacuum is used to make both the up and down shifts (instead of a spring in one direction), giving exceptionally fast and positive changes tion), giving exceptionally fast and positive changes of axle gear ratio. This permitted positive split changes however fast the main gear lever was moved and was of great value in getting into the next higher or lower "half" gear on long upgrades.

Well-Matched Gear Ratios

Careful selection of both gearbox and axle ratios has resulted in good matching to engine characteristics and an effective eight-speed transmission with fairly evenly graded steps. Although, as we have said, simultaneous gearbox and axle changes were easily made, we confined our acceleration tests from easily made, we confined our acceleration tests from rest to simple changes in the main gearbox only and the average figures shown in the table were obtained by going from second to top in low axle ratio. Figures only slightly higher could be obtained by going from first to third in high axle ratio and if very fast split changes were used the time to reach 30 m.p.h. from rest could be reduced from that published by 2 to 3 sec. Acceleration from speeds published by 2 to 3 sec. Acceleration from speeds around 10 m.p.h. in top gear (low axle ratio) was quite smooth and fuss-free.

The new Bedford brakes are an improvement in normal driving, giving progressive and satisfying response for generally lighter pedal pressures. In a series of simulated emergency stops from 30 m.p.h. on good tarmac surfaces, average distance to stop

from the mark made by our chalk-firing magazine at first pressure of the pedal was 53 ft., with a best stop of 51 ft. These stops produced an even marking on the road from all wheels without locking and Tapley meter readings ranging between 60 and 68 per cent indicated a steady rate of deceleration and also steadiness in the suspension under emergency braking conditions. The handbrake proved convenient to use and more than usually effective; as well as holding the loaded vehicle facing both up and down hill on gradients up to 1 in 5, it produced consistent Tapley meter readings around 40 per cent.

Effects of Abuse

Given the sort of abuse only accorded by the bad or ignorant driver, such as in our usual coasting run down Titsey Hill, the brakes could be heated to the point where a degree of fade occurred. Good ventilation of the drums ensured a fairly rapid recovery from this condition and, due to the fact that moulded linings do not glaze seriously when subjected to overheating, recovery was complete when the temperature returned to normal.

Circumstances prevented a fuel consumption test being carried out over our usual 15-mile course and a substitute route six miles long and providing



Brasted Hill, on which a comfortable first gear (high axle ratio) start was made, was only one of the steep hills on which the Bedford displayed outstanding zest

very similar undulating and rather winding conditions was used. Over this route, with fairly light traffic, the Bedford returned the very favourable figure of 19.2 m.p.g. at an average speed of 26 m.p.h., indicating the sort of result likely to be achieved with a vehicle in good condition in fully loaded service when proper use is made of the gears and traffic checks are not too frequent.

On trunk haulage with some light running a figure better by several miles per gallon is obviously likely, while an indication of about the highest consumption likely in all fully loaded frequent-stop service was given in our overall check. In this, for

sumption likely in all fully loaded frequent-stop service was given in our overall check. In this, for 86 miles of mainly hard driving over a hilly route, which included about 25 miles in London suburban traffic and many stops and much low-gear work, the fuel consumption averaged 12.7 m.p.g.

Accurate Speedometer

During the course of the test opportunity was taken over a measured quarter-mile to check the speedometer, which was found to be accurate at 30 m.p.h. Turning circles were also measured and found to be 51 ft. on the wheeltrack—2 ft. better than the published brochure figure—and 54 ft. to the sweep of the outside front wing. The vehicle was also driven fast on suitable stretches of open road, when top speeds were found to be about 42 m.p.h. in low axle ratio and over 55 m.p.h. in high. Steering was light and positive at high speed and low—the demand for the optional steering servo is not likely to be high—and stability on not-so-

is not likely to be high—and stability on not-so-good surfaces was noteworthy.

But the greatest pleasure we derived from driving the Bedford was in the hill sections, where the willing performance of the engine and the ease and precision of the combined gearbox and axle change mechanisms made our work much easier than usual.

The r in 6 gradient of Bug Hill was climbed non-ston in second (low axle) and in a subsequent climb stop in second (low axle) and in a subsequent climb it was found just possible to restart on 1 in 6 in high first. Low first was needed to start away on the 1 in 5 section of one of the hills in the Brasted area, but this was well inside the vehicle's capacity and once started, speed was rapidly built up as the

and successive very fast split

changes were made.



NATION'S REMEMBRANCE

POPPY DAY

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British Legion . Haig's Fund . Pall Mall . London . S.W.1

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Freight Equipment on Show

(Continued from page 5)

modity which does not require special treatment during transportation. There are also the open types C and D, and the H type which, with a capacity of 2½ tons, is small enough to be craned to upper floors on building sites for unloading. The L type is also a small container—but of 4 tons capacity—with lid and bottom doors for transporting such commodities as cement, dolomite, lime, etc. Several experimental containers made of light alloy are being tested and one of these, designed for general purposes, weighs only 1 ton, designed for general purposes, weighs only 1 ton, but has a load capacity of 5 tons contained within 500 cu. ft. of space. It has other important features, including a flat top which makes it stackable and it can be handled by fork-lift truck.

For the Smaller Load

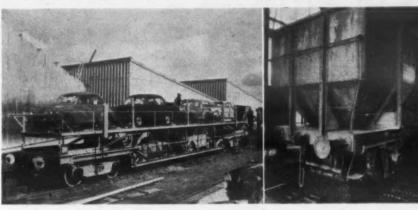
A large part of the traffic carried by British Railways and British Road Services is comprised of general merchandise which must be handled into and out of vehicles. There are several ways of and out of vehicles. There are several ways of making up smaller unit loads other than by containers, but one of the better methods, employed widely in factories and warehouses and which is being progressively adopted in transport, is palletisation. Both B.R. and B.R.S. are ready to co-operate with traders in the development of palletised services which avoid unnecessary handling and make for quick loading and discharge of vehicles. Pallet loads, with their uniform dimensions, can also allow good vehicle

carrier is used for car bodies. It is, in fact, a four-body pallet which is loaded by fork-lift truck. These pallets were designed by B.R.S. and are used between factories in Oxford and Birmingham.

Bulk Transport

The bulk-carrying capacity of the B.T.C. under takings is being continuously expanded. British takings is being continuously expanded. British Railways is progressively increasing the sizes of its wagons. In a recent year it produced over 33,000 all-steel 16-ton mineral wagons, 4,500 hopper wagons of 21 tons capacity, 1,300 25½-ton iron-ore hopper wagons and 530 of 33-ton capacity. The 16-ton mineral wagon is the general wagon for bulk cargoes, but a great volume of coal and other minerals is carried daily in 21-ton hopper wagons of which there are now about 26,000. wagons, of which there are now about 36,000. There are also some 10,000 21-ton flat-bottomed mineral wagons, many of which run in block trains direct from the collieries to merchants in main industrial and residential centres. The wagon with two axles with the highest permissible gross weight for widespread use is the 24½-ton hopper mineral wagon, but the largest hopper wagon in service is the 56-ton bogie iron-ore vehicle. A train of nine of these vehicles can carry 500 tons and the unloading time, through power-operated doors, is less than 60 sec. for the complete train.

There are some commodities which require specialised equipment. Cement is an example.



Double-deck railway wagon for car carrying; right, discharging coal from a 24½-ton four-wheel

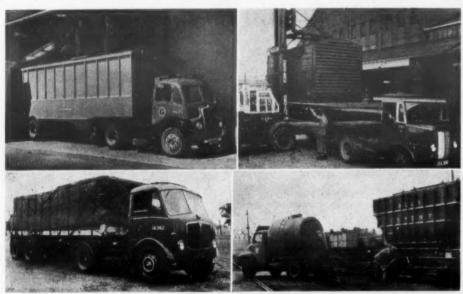
loadability. This was exemplified by a B.R.S. Bristol eight-wheeled rigid diesel lorry, shown with a palletised load of over 16 tons in weight. British Railways has nearly 1,500 specially built pallet vans in service, and several hundreds more on order, for the exclusive conveyance of palletised loads. The example shown had extra wide doors for easy access by mechanical-handling equipment. It is built to accommodate the most common sizes of pallets, but can be adapted for any size by removable partitions and shields which also prevent movement during the journey. There are also over 1,200 pallet brick wagons used for the conveyance of refractory bricks.

Outsize Loads

British Railways and British Road Services have specialists experienced in handling the outsize, awkward or exceptionally heavy consignment. The British Railways transformer wagon shown has 24 wheels, is 92 ft. long and can carry electric transformers of up to 135 tons in weight. The

It consolidates during transit, has virtually no fluidity and normal discharge by gravity is impossible. These difficulties are overcome by the special 20-ton all-steel enclosed wagon which can be pressurised with air for pneumatic discharge through a flexible pipe to a road vehicle or to a storage silo. These wagons are also suitable for alumina, salt, fullers earth, powdered lime, pulverised fuel and slate dust.

The B.R.S. 10-ton bulk grain-carrier is built as an articulated unit consisting of tractor and a fifth-wheel semi-trailer, its grain hopper has a capacity of 10 tons. It can be loaded in 45 min. and unloaded in 10. British Railways also undertakes the transport of grain in bulk, and for this purpose has a fleet of 700 20-ton wagons. The exhibition also included a selection of rail and road vehicles designed for carrying liquids in bulk, with tanks mounted on wagon underframes of 10,000 gal. capacity, demountable tanks for transfer to and from road vehicles and road trailers designed to be carried piggy-back fashion



B.R.S. grain carrier on Guy chassis; BD light alloy container being lowered by Freightlifter on to Thornycroft lorry; below, B.R.S. 33-ft. articulated outfit for 15½-ton payload with A.E.C. motive unit; and, right, air discharge of cement wagon

wagon is equipped with traversing mechanism which enables an exceptionally wide load to be slewed sideways to avoid obstructions. The side girders are removed to load the vehicle. Also on view was a model of the largest vehicle in the Although British Railways and British Road B.R.S. fleet. Capable of carrying a load of up to 200 tons, it is a 24-wheeled trailer, with hydraulic suspension and power steering for both bogies provided by two diesel generators. The frame of the trailer can be varied in width and the main girders fixed at varying heights. A model was exhibited because the vehicle is in such demand that bookings are now being made two or three

A motor car, although not a big load in itself, becomes part of a formidable consignment when it is accompanied by perhaps 20 or 30 others. Operating on both the railways and for B.R.S. are vehicles specially designed for carrying cars or car bodies. The railway car-carrier takes or car bodies. The railway car-carrier takes six medium-sized cars, four on the top deck and two on the bottom deck. They are positioned by a hand-operated lift and cars can be loaded from either end up inclined ramps. The wagon is either end up inclined ramps. The wagon is equipped with a braking system which can be operated by vacuum or compressed air so that it can be used here or on the Continent. The B.R.S. car-carrier vehicles exhibited were of two types. One is for delivering vehicles from the factories and can carry four cars on two decks. The other

Services are transport providers in Great Britain, they also offer valuable services to the exporter and importer via the train ferries and railway shipping services. Shipments by all these routes can be made by containers. Since its introduction in 1956 the British Railways export express service, giving assured next-day service to full-load export traffic to the principal London docks, has been extended to embrace still more centres and to include the docks at Liverpool, Manchester and

to include the docks at Liverpool, Manchester and Hull. B.R.S., in conjunction with its associated shipping line, operates the Transport Ferry Service to the Continent via Tilbury and Antwerp, and to Northern Ireland via Preston and Larne.

Another B.R.S.-owned subsidiary, Ferry Trailers, also participates in the Preston—Larne service. Anglo-Continental Container Services, also a B.R.S.-owned company, operates container services by specially built container ships between Preston and Larne, and Ardrossan and Larne. A model of Bardic Ferry was exhibited. Specially designed railway wagons using the train ferry services for traffics to and from the Continent were shown. Interfrigo and Transfesa wagons were included in this display.



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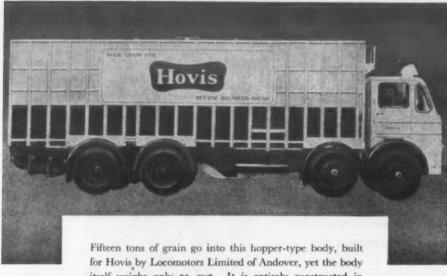
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TELEVISION IN VEHICLE **TESTING**

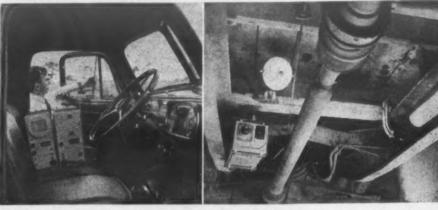
Use by Vauxhall Motors

TO help in studying the behaviour of cars and commercial vehicles in motion, engineers of Vauxhall Motors, Limited, are now using open-circuit television at the 54½-acre Vauxhall test centre at Chaul End, near the company's Luton and Dunstable factories. The transmitting licence is the factories is the factories. and Dunstable factories. The transmitting licence is the first to be issued by the General Post Office for industrial use in Great Britain. The camera, mounted on the vehicle close to the component being observed, is connected to a small transmitter inside the body or cab. The aerial is fixed to the roof of the vehicle and transmits to a receiver aerial on the roof of the nearby research laboratory.

being observed it was impossible for more than two people to study the results at one time. Hence the decision to develop a system with the receiver stationary in the laboratory.

Developed Own Transmitter

No suitable transmitter was available to suit the specialised needs of this work, so Vauxhall research men set to and built one themselves. Because the frequency allotted by the G.P.O. (750 Mc. per sec.) is not normally used for television in this country they had very little information or experience to draw on and no suitable valves were available. The



Setting up the aerial, transmitter and driver's monitoring screen in a Bedford cab prior to test on propeller shaft behaviour and, right, the mounting of television camera and spotlight under the chassis

This is connected to a normal TV receiver inside the building, where several people are able to study

the building, where several people are able to study the picture at one time.

This new tool, still being perfected by Vauxhall's research men, is being used in a number of ways. Already it has successfully revealed the cause of intermittent localised vibration on some vehicles at certain critical speeds. The engineers expect to get particularly useful results by studying the behaviour in action of springs and shock absorbers, propeller shafts and many other hard-to-see components.

Vauxhall Motors has used closed-circuit television at Chaul End for the past two years. Before that, at Chaul End for the past two years. Before that, a cine camera fixed in an appropriate spot on the vehicle to film the components being studied, was the only way of providing pictorial information. But this system involved delays for developing the film and the possibility of having to retake if the results were not satisfactory. The closed-circuit TV link marked a big step forward, but because the viewing screen had to be carried in the vehicle

extremely high frequency made it impossible to use normal tuning devices, but with help from various firms a suitable transmitter was finally developed, to give good results over the short distances involved. The whole unit fits into a case 6 in. by 14 in. by 16 in., which matches the size of the camera remote control gear.

There is still some picture flutter when the transmitting vehicle is moving fast, but this does not preclude accurate observation and the Vauxhall research men are confident they will overcome it within the next few months. Power for the transmitter and for the lamp that illuminates the part of the vehicle under observation is provided by a petrol-engine driven generator and rotary con-

petrol-engine driven generator and rotary converter carried in the boot of a car or back of a lorry. Supplementing the comprehensive research and test techniques already in use at the Vauxhall test centre, the new TV system should be invaluable in helping to provide the research engineers' basic need—the supply of accurate, immediate and controlled information.

Loch-Light comes to Scotland



and Austin horse-power helps to bring it

Power enough to keep a town the size of Aberdeen going—that will be the daily output of electricity from the Breadalbane Project (part of the vast Scottish hydro-electric scheme), now nearing completion.

That power will come from thousands of tons of water; water collected from the mountain streams of Perthshire and channelled through an elaborate system of tunnels to Glen Lyon. Here, at the threshold of the Highlands, a mighty dam is almost finished. Here the pipelined tunnels converge after cutting through mountain and rock for up to 9 miles. And here the waters are already held in check . . . a great man-made loch now stretches miles back between gaunt mountain slopes.

The rocky road to Glen Lyon To reach construction sites, 22 miles of road had to be cut over the mountains between Glen Dochart and Glen Lyon. With alarming hairpin bends, the single track zigzags perilously up the bare hillside. Overall gradient on this road is 1 in 5. Steepest drags

Soon Mr. Knights will have another Austin 7 tonner on the road. Mr. Carlisle (right) of Carlaw (Cars) Ltd., Glasgow, will supply it. So Big Jock Wilson takes over the route and out the rougher part tough journey.



The great dam grows Spanning Glen Lyon, the white bulk of the Lubreoch dam rises to the sky. Empty now, the Austin 7 tipper speeds back for its second daily

Twice a day, 51 days a week, an Austin 7 tonner climbs this steep, rocky road, carrying wet sand. The sand is collected at Doune, over 50 miles from the site. Over 2,000 tons of it have been delivered so far. And, clocking up a daily average of 225 miles, over 35,000 miles have been covered by this one lorry on this job alone.

"Aye, I will that." Of its performance, owner Walter Knights, haulage contractor of Fintry, Stirlingshire, says: "I bought the Austin in May 1957 from Mr. Carlisle of Carlaw (Cars) Ltd., Glasgow. Since then it has given me no trouble, but for one or two footery wee things. I'm getting 15 miles to the gallon out of it the now and I'm very well satisfied with it." Asked if he would buy another Austin, Mr. Knights was emphatic. "Aye, I will that," he said.



SCOTTISH RAIL FREIGHT

Assured Arrival Services

NEXT-DAY DELIVERY THE RULE

The "Hielan Piper" 6 p.m. fitted freight train from Paisley (Greenlaw) to Inverness, here passing through Dunblane, carries Glasgow AA traffic for Aberdeen

FOR more than six months nearly all the general FOR more than six months nearly all the general merchandise traffic passing by rail between Glasgow stations and Aberdeen or Dundee, or vice versa, has been moved in the "Assured Arrival Service" of the Scottish Region which carries with it the promise of next-day delivery to customer. So far as is known, there has been no case in which this promise has not been fulfilled in respect of merchandise traffic properly falling within the ambit of the scheme. During the period April 8-September 27 this year, i.e. roughly the first six months of AA service, 78,274 consignments weighing approximately 10,670 tons were carried

first six months of AA service, 78,274 consignments weighing approximately 10,670 tons were carried between the above points.

The scheme was extended on similar lines to Inverness and Elgin on July 7 and since September 22 Edinburgh has been linked with these same four points. By courtesy of Mr. S. E. Raymond, chief commercial manager, Scottish Region, who with Mr. H. M. Lattimer, assistant operating superintendent, has responsibility for the introduction of the scheme, we

the scheme, we recently had an opportunity to inquire for ourselves into its working and the record to date.

Fitted Wagons

The modernisation pro-gramme has resulted in the availability of fitted freight wagons in inwagons in creasing num-bers and with their aid the Scottish Region has been putting on more and more express freight trains, with connecting services, throughout the region. Today, for example,

every train leaving Glasgow Buchanan Street goods station is fully fitted. An article by Mr. F. C. Margetts, the then chief operating superintendent, in our September 14, 1957, issue elaborated this phase of development in the Scottish Region. These trains can give a fast overnight service between principal cities and towns in Scotland by accelerating arrivals at goods stations so as to increase discharge on the night shift.

But it was perceived that the full impact could

the night shift.

But it was perceived that the full impact could not be achieved unless their existence was made known to the trader. Instead, therefore, of hiding its light under a bushel, the Scottish Region boldly decided to capitalise to the full its powerful new asset and to promise users that small consignments or full wagon load traffic, whether carted by the customer or British Railways, would, if delivered into the prescribed stations and before the prescribed closing time, be assured availability to their customers on the day following and at no extra charge. Indeed, pursuing their new commercial policy, the railways are prepared to quote reduced charge. Indeed, pursuing their new commercial policy, the railways are prepared to quote reduced rates for consignments over r ton. Such a scheme fits in well with the present-day distribution methods, revolving as they do about minimum quantities in stock at retail outlets. AA service is automatically given to all general merchandise traffic suitable for class C fully fitted freight trains. Distinctive gummed or tie-on labels are supplied on demand; although their use is not necessary they could leave a favourable impression with both sender and consignee. All wagons containing assured arrival traffic bear a wagon label printed in red

Stations Served

to that effect.

The following stations are embraced in the original Glasgow, Aberdeen and Dundee scheme, to which this article is confined. It should be noted that traffic is not accepted in AA service for destination outside the property of the statement of the service statement of the tinations outside the respective city or town cartage areas:

ABERDEEN
Aberdeen (Guild Street)
Aberdeen (Waterloo)
Kittybrewster undee (Tay Bridge) undee (West) undee (East) GLASGOW
South Operating District
Bridgeton
Catheart
General Terminus
Gran North Operating District Buchanan Street

Camlachie inning Pari ollokshaws rinces Dock nieldhall

olicross Shettleston include private sidings, except those located as under:

Bridgeton

Aberdeen traffic from Glasgow is served by a Aberdeen traffic from Glasgow is served by a train commencing from Paisley at 6 p.m. (Saturday excepted). Named the Hielan Piper, it arrives at Kittybrewster (en route to Inverness) at 1.6 a.m. A second train is the Kitty (also SX), departing Dumfries at 6 p.m. to arrive Kittybrewster at 4.35 a.m. Traffic is loaded as far as possible on the Hielan Piper. Both of these trains load traffic from South Glasgow stations; from Buchanan Street, serving stations in the northern operating district, the Aberdeen train leaves at 8 a.m. (SX), arriving Aberdeen at 1.24 a.m. Appropriate times are sub-Aberdeen at 1.24 a.m. Appropriate times are substituted on Saturdays. From these sample timings in one direction only it will be observed that ample time is available at destination for transfer wagons to subsidiary depots and unloading.

Feeder Services

Dealing still with outward traffic from Glasgow, early and later feeder services run from Glasgow South stations shown above to Bell's Yard, to consouth stations shown above to Bell's Yard, to con-nect with trunk services, at departure times gener-ally between 3.30 p.m. and 6 p.m., but as late as 8.15 p.m. from certain stations. Feeder services are put on from Glasgow North stations at compar-able times, running to St. Rollox exchange sidings. Punctual departure and arrival of these feeder ser-

vices is an essential prerequisite to the efficient working of the trunk services and necessitated much revision of train working, especially in the Glasgow area. It may be noted here also that tran-Glasgow area. It may be noted here also that tranship traffic arriving in time from other places and other regions at Buchanan Street is given AA service where appropriate. The class C trains, falling within the highest category for freight, are suffixed "AA" in the working timetable and, once assembled, will not, of course, be passed through marshalling yards en route, stopping only at a predetermined and limited number of places to pick up or detach wagons. up or detach wagons.
All those concerned with their operation have

been told that it is absolutely essential for the success of the scheme that these trains run to time, and that the laid-down conections are maintained To assist in reliability of service, which is compul-sory, the following arrangements have been made:

(1) Traffic must be loaded in fitted wagons; that which canno be loaded in fitted vehicles, e.g. tank, bolster and minera

if the scheduled services permit of this traffic being conveyed, and give the requisite next morning arrival. To ensure connections being maintained, the n u m b e r o f "A s s u r e d

then between controls for each trunk train.

(3) Any delay likely to affect connections to be advised forward immediately to destination controls, yards and goods stations as necessary. and, where needed, to the appropriate district comministe delays, and special arrangements by rail or road to be adopted if necessary to fulfil the "Assured Arrival" wagons being detached defective, the stationmaster, goods agent or yardmaster where the vehicle is detached must be informed immediately so that he can arrange a forward service to ensure arrival of traffic the day following dispatch. Where the next goods service will not enable this to be done, use should be made of passenger train or British Railways or British Road Services motor vehicles, according to circumstances.

(5) Any difficulties to be reported at once to district control and headquarters control as necessary.

It appears that little or no resort has been necess-

It appears that little or no resort has been neces sary to these precautions but they serve to indicate a determination to overcome any but the most

a determination to overcome any but the most extraordinary circumstances.

Users are generally acquainted with the closing times of the trains in which they are interested and in that respect the work of the railway cartage staff is easier. Closing times have been progressively retarded to the maximum degree and are now no more than 15 min. before scheduled train departure in some instances. Each goods station retains its cartage fleet and no important modificaretains its cartage fleet and no important modifica-tions have been introduced in this sphere save perhaps that each driver concerned with AA traffic is given a time within which he must be back with his collections in order to leave sufficient time for depot work. Should he fail to observe this limit the traffic would be loaded to a convenient passenger train and the stationmaster and goods agent at destination so advised. If a cartage driver finds that he cannot take on all his collections a relief vehicle will be sent out. This is so even if the sender has not notified the station of his extralarge consignment, which in the ordinary way might not be collected until the following day.

At Buchanan Street consignment notes handed At Buchanan Street consignment notes handed in by the motor drivers are immediately microfilmed for record and charging purposes. They are then sorted as to AA and other traffic, the former receiving priority across the loading platform. Wagons for AA traffic are preset as far as possible in an order which will minimise the amount of shunting necessary at Dundee or Aberdeen. When the traffic on hand warrants, separate wagons are provided for "rough," "fine" and perishable merchandise.

Supervision of Inwards Traffic

Inwards traffic at this station is received at a platform reserved for the purpose and every AA consignment listed as it comes off the wagon. A record is thus available at once of every consignment for which delivery that morning is compulsory. Cartage rounds are adjusted if necessary to that end. This portion of the transit needs especially close supervision. However, it has not been found necessary to enlarge the staff working the depot; a rearrangement of wagon unloading priorities has sufficed.

Well over 100,000 consignments have already found their way to destination without failure using these new facilities of the Scottish Region. It seems reasonable to assume that they have contributed in no mean measure to arresting the slide from rail to road, and even in regaining traffic, during a period of intensified competition from road hauliers. Much advance preparation went into the schemes already in operation, but while they are quietly confident that further expansion is feasible, and beyond the border, the operating and commercial departments do not propose to move until fool-proof working arrangements can be thrashed out and until operating staff along the route are fully briefed on procedure, both regular and in emergencies.

emergencies.

This is not to say that dependable transit is lacking outside the scope of the AA service. Already traffic is moving with assured delivery times to English destinations and more will follow as further fitted wagons go into circulation and additional express freight trains, eliminating 24-hr. delays at marshalling yards, are timetabled. These are the "passenger services" of the freight department, a development which is destined to occupy a vital part in the modernisation scheme. The trader will benefit from passenger-train punctuality and those other things, freedom from loss, pilferage and damage to goods which must result from fewer but speedier handlings.



Photo by courtesy of Eastern Railway of India

Built by The English Electric Company for the 3,000 V. D.C. electrification, twelve of these electric locomotives are now operating on the Howrah to Burdwan Section of the Eastern Railway of India.

These 111-ton 3,120 h.p. locomotives, designed for a service speed of 70 m.p.h. were the first 3,000-volt electrics to be commissioned into service in India.

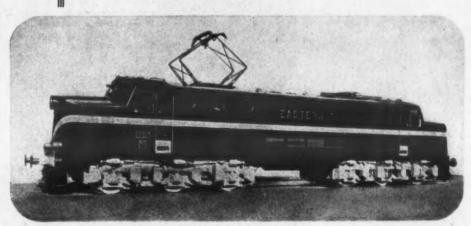


Photo by courtesy of The English Electric Co. Ltd.

They are fitted with

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Brakes Made in England by:-

Westinghouse Brake and Signal Co. Ltd., 82 York Way, Kings Cross, London, N.1

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Abnormal Loads • Lifting

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BRISTOL (1): 61 Park St.

Bristol 25435/6

ARDROSSAN: (Ayrshire) Harbour Street, Ardrossan-Saltcoats 1911/2 GLASGOW (C.2): 10 Bothwell St. City 6997/8 LONDON: (Depot) Elland Rd., S.E.15. New X 4885/7 LONDON: (Offices) 79 Dunton Rd., S.E.1.



This Bus will Go Further

- because the battery it is using is appreciably lighter than others of equivalent power - besides being exceptionally dependable. More and more manufacturers, and operators, are finding-

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The high-capacity TX Series (Illustrated) incorporate 'X' metal grids, 'Pibrak' separators with vitroom felt retainer mats, cold start plates and moulded hard rubber (ebonite) mbled in double-impres hardwood containers. Available in capacities of 145, 174, 232 ampere hours (at 10-hour rate).



NAUTICAL EQUIPMENT **SHOWROOM**

Kelvin Hughes Enterprise

THE new London showroom, nautical and chart departments of Kelvin and Hughes (Marine), The new London showroom, natural and chart departments of Kelvin and Hughes (Marine), Limited, has been opened in the recently built St. Clare House, Minories, London, E.C.3. The move from the old premises severed the company's connection of over 100 years with Fenchurch Street. The new premises were formally opened on November 3 by Mr. C. G. White, director and general manager of Kelvin and Hughes (Marine), Limited. Commenting on the move, Mr. White said that the company—then Henry Hughes and Son, Limited—first opened premises in the heart of the shipping world at 120 Fenchurch Street, in 1840. Since then the enterprise had been through a period of continuous expansion. The present move to St. Clare House was in keeping with this steady growth and was part of the Kelvin Hughes policy of providing the best possible facilities for customers. The company's long-term aim of providing, under one roof, a comprehensive service which would satisfy all normal requirements of modern marine navigational practice had been achieved in the new premises.

modern marine navigational practice had been achieved in the new premises.

Covering a total ground floor space of 6,500 sq. ft. in the new 14-storey building, the premises include a well-equipped showroom devoted exclusively to the display of Kelvin Hughes equipment. This occupies an area of 1,250 sq. ft. and is the largest the undertaking maintains out of all those in the major seaports of the United Kingdom.

Displayed on one of the walls are representative examples from the various ranges of 25 Kelvin Hughes echo sounders. All these instruments are fitted as working installations, and an ingenious sounding board makes it possible to simulate the effect of varying depths of water for demonstration

purposes. Also operating in the showroom is the latest type of Kelvin Hughes type 14 marine radar. For demonstration purposes the radar equipment is fed from an aerial mounted on the roof of St. Clare House more than 150 ft. above street level. In the showroom the display unit presents a P.P.I. picture of the surrounding area and the nearer reaches of the Thames. Included in the new premises is the chart correction department, with a staff of 16, the largest and most comprehensive of its kind in the United Kingdom.

A new free consultative service to welding users in British industry has been introduced by Eutectic Welding Alloys Co., Limited, Feltham.

The Northern Ireland branch of Pirelli, Limited, is now operating from new premises at 3-9 Thomas Street, Belfast. The telephone number (Belfast 26109) remains unchanged. The company's recently established South London branch has now moved into premises at 50 Clapham Road, London, S.W.9 (telephone number: RELiance 3867).

The properties and uses of nickel, nickel alloys and related materials, is the theme of a four-day exhibition which opens at the College of Aeronautics, Cranfield, on Tuesday, November 18. The exhibition, held by the Mond Nickel Co., Limited, is open to all industrial and commercial organisations in the area. Coaches will be running a shuttle service between the college and the main-line railway stations at Bedford and Luton. Invitations and coach times are available from the company at Thames House, Millbank, London, S.W.I.



The T9 4-4-0 built for the London and South Western Railway in 1899 passing through Liphook on the R.C.T.S. special train destined for the Longmoor Military Railway



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FOR CLUTCH RELIABILITY BE SURE AND CHECK IT'S A BORG & BECK

LEAMINGTON

SOCIAL AND PERSONAL

The late Sir William Halcrow

WE regret to record the death, at the age of 75, of Sir William Halcrow, M.I.C.E., a member of Sir William Halcrow and Partners, engineering consultants, and their predecessors, C. S. Meik and Halcrow, since 1921. Sir William (he was knighted in 1944) was educated at George Watson's College and Edinburgh University and was articled to Messrs. P. W. and C. S. Meik. His commissions were primarily concerned with hydro-electric and dock schemes here and abroad, but he was for a period consulting engineer. with hydro-electric and dock schemes here and abroad, but he was for a period consulting engineer, with the late Sir H. H. Dalrymple Hay, to the London Passenger Transport Board, for Underground railways and connected with extension of the Bakerloo Line to Finchley Road and the Northern Line to East Finchley in 1939-40. He also devised the wartime flood protection works on the Underground. He was a past-president of the Institution of Civil Engineers and had been a member of the Royal Fine Arts Commission.

Mr. Edmond A. Grace, A.C.A., who was earlier assistant chief accountant of Coras Iompair Eireann, has rejoined the undertaking as assistant general manager

Mr. D. J. C. Robertson, C.B.E., T.D., B.Sc., A.M.I.Mech.E., A.M.I.E., recently appointed general manager of the Metropolitan-Cammell Car-

riage and Wagon Co., Limited, at Saltley, Birmingham, was educated in Aberdeen and received his engineering training as an apprentice with William Mc-Kinnon and Co., Limited, of that city, and later as a student apprentice with the apprentice with the British Thomson-Hous-ton Co., Limited, Rugby. He attended Aberdeen University and Robert Gordon's Technical College, Aberdeen, gaining his B.Sc. degree in both mechan-



Mr. D. J. C. Robertson degree in both mechanical and electrical various mechanical and electrical engineering. Between 1932 and 1939 he held various mechanical and electrical engineering appointments with the Royal Ordnance factories at Woolwich, the Crown Agents for the Colonies engineering inspection department and the Air Ministry Works Directorate. He was commissioned in the Territorial Army in 1937 and, during 1939-45, served with the R.A.O.C. and R.E.M.E. workshops in France, Egypt, Algeria and Italy and, from 1943, as a colonel and chief electrical and mechanical engineer in command of various base workshops. He was twice mentioned in dispatches and in 1945 was awarded the C.B.E. Mr. Robertson joined Metropolitan-Cammell in 1946 as assistant to the production general manager and has been successively works manager at the Old Park works and production general manager Old Park works and production general manager prior to his present appointment as general manager; he was appointed to the board in 1955, is a director also of Metropolitan-Cammell-Weymann, Limited, and a member of the manager. ment board of the Engineering and Allied Employers' Association for its Birmingham and district area.

On October 31 Mr. J. W. Heathcote retired from his position of purchasing manager of Ferodo, Limited, after 34 years' service with the company and 31 in that position. He is succeeded as purchasing manager by Mr. J. Holdgate, hitherto assistant purchasing manager.

Mr. N. R. Crump, president of the Canadian Pacific Railway, will be the speaker at the annual anniversary luncheon of the Institute of Transport on November 11 at the Connaught Rooms. The president of the Institute, Major-General G. N. Russell, will be in the chair.

A familiar figure at conferences and whenever operators foregather is that of Lieut.-Colonel A. W. Reed, sales manager (operators), C.A.V., Limited.

Colonel Reed saw army

service in the 1914-18 war, serving from 1915 to 1920 with the 1st East Surrey Regiment. He began his engineering career as a student apprentice with the English Electric Co., Limited, in 1920, serv-ing as an electric traction engineer in the rail-way department from 026. and engineer tramway and trolleybus department from 1926 to 1934. In that year he joined C.A.V. as a sales

Lieut.-Col. A. W. Reed

served from 1939 to 1945 with the R.A.O.C. and R.E.M.E., including a period in Egypt. He rejoined C.A.V. in 1945 and in 1954 was promoted to his present appointment. present appointment.

Mr. G. J. Shannon has been appointed manager for British European Airways in France, and in consequence Mr. W. O. Lloyd becomes manager, Switzerland, and Mr. T. H. Pollock manager, Switzerland, and Mr. ... Malta and North Africa.

Mr. Chaceley T. Humpidge, general manager, Bradford City Transport, has accepted the office of president of the Light Railway Transport League in succession to Mr. Walter Luff, formerly general manager of the Blackpool municipal system.

The Society of Motor Manufacturers and Traders has appointed Mr. John Dugdale, M.C., its representative in North America, and to be vice-president-executive of the subsidiary company in the U.S.A., the British Automobile Manufacturers'

As part of the policy of integration between Mirrlees, Bickerton and Day, Limited, and the National Gas and Oil Engine Co., Limited, due to the impending resignation of Mr. B. R. Cant as director and general manager of National Gas and Oil Engine, Mr. R. L. Watt has been appointed a director of the latter and, while remaining director and general manager of Mirrlees, Bickerton and Day, becomes general manager of National Gas and Oil Engine from December 1.

Mr. G. C. R. Eley, C.B.E., has joined the board of the British Oxygen Co., Limited.

The next annual convention of the Association of British Travel Agents will be held at Harrogate during the period October 24-28, 1959.

The Minister of Transport has appointed County Councillor Col. T. Gregory, M.C., T.D., to be a member of the South Eastern Area Transport Users Consultative Committee until June 30, 1960, as one of the representatives of local authorities.

Garret FitzGerald, B.A., research and schedules manager of Aer Lingus, has been appointed senior research assistant at Trinity College, Dublin, but will retain a consultative status with Aer Lingus.

The Institution of Highway Engineers has formed its 12th branch. It covers Hampshire, West Sussex, part of Surrey and the Isle of Wight, and will be known as the Southern branch. Mr. H. N. Jenner, M.B.E., M.I.C.E., was installed as first chairman by the president of the Institution, Major H. E. Aldington, C.B., M.I.C.E.

Mr. Harry Green, director and chief engineer of the Metropolitan-Cammell Carriage and Wagon Co., Limited, Saltley, Birmingham, having reached normal retiring

age, recently retired from the company's service and relinquished his seat on the board. Mr. Green trained in Mr. Green trained in the shops and drawing office of the Great Western Railway at Swindon. He served in the Royal Engineers throughout the whole of the 1914-18 war and joined the Metropolitan company as a junior draughtsman on his demobilisation in 1919. demobilisation in 1919, becoming successively leading draughtsman, assistant to the chief engineer (designs), Saltley works manager, special



director and chief engineer (designs), culminating in his appointment to the board on January 1,

Mr. L. J. Dunnett, C.B., C.M.G., who has been appointed Deputy Secretary in the Ministry of Transport and Civil Aviation, will take charge of inland transport matters at the Ministry in place of Mr. P. Faulkner who will take over shipping matters. These changes were effected from November 3.

Speaking to more than 450 guests, which included Oldham service agents and representatives of the transport, mining, telecommunications and electrical industries, at the annual Motor Show dinner given last week by Oldham and Son, Limited, Mr. John Oldham, the company's chairman and joint managing director, referred to 1958 as a year of good teamwork, good housekeeping and good government. For the first time for several years, he said, the assembled company had been able to sit down without a financial crisis on its plate. This year's Motor Show, the biggest and brightest ever, together with events of the onths gave as great encouragement for the future.

Developments in shipbuilding, cargo handling Developments in shipbuilding, cargo handling and industrial relations are among the subjects of this winter's Loudon lectures on engineering production at Glasgow University. The series of six lectures is planned for managers, supervisors and others concerned with management in industrial undertakings. The opening lecture on modern shipbuilding was given on October 29 by Mr. James Lenaghan, shipyard director, Fairfield Shipbuilding and Engineering Co., Limited. Industrial relations were to be discussed by Mr. D. L. Nicolson, technical director, Production - Engineering, Limited, and the development of cargo handling by Cmdr. A. C. Hardy of I.C.H.C.A.



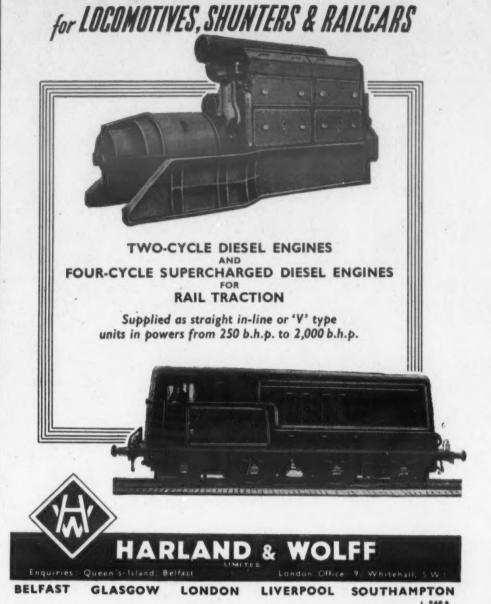
At the launching of the Shell tanker "Anadora" (18,000 tons) from the Hebburn yard of Hawthorn Leslie (Shipbuilders), Limited: left to right, Lord Bicester, a director of the Shell Transport and Trading Co., Limited; Lady Bicester, sponsor of the ship; Mrs. A. S. C. Hulton; Mr. A. S. C. Hulton, managing director of Shell Tankers, Limited; and Sir Robin Rowell, chairman of the builders

Mr. G. F. W. Adler, B.Sc.(Eng.), D.I.C., A.M.I.Mech.E., has been appointed chief mechanical engineer and a member of the directorate anical engineer and a member of the directorate of engineering of Marconi's Wireless Telegraph Co., Limited. He joins Marconi from the English Electric Co., Limited, at Rugby, where he held the position of chief development engineer.

*

Mr. A. W. A. Dick-Cleland, B.Sc., A.R.T.C., M.I.E.E., F.B.I.M., who recently relinquished his appointment as joint managing director of the Lancashire Dynamo and Crypto, Limited, has been appointed a director of Brush Electrical Engineering Co., Limited, and the manager of its rotating machines division at Loughborough.

The British Transport Commission has appointed Mr. F. J. Lane, O.B.E., M.Sc., M.I.E.E., of Messrs. Preece, Cardew and Rider, as a further member of its panel of consulting engineers. The panel is available to the Commission's chief panel is available to the Commission's chief engineers for consultation on technical problems associated with a.c. electrification. The other members, who have been reappointed, are Mr. Julian S. Tritton, of Messrs. Rendel, Palmer and Tritton; Mr. E. L. Wheatcroft, of Messrs. Merz and McLellan; and Mr. Geoffrey F. Kennedy, of Messrs. Kennedy and Donkin. Diesel Engines

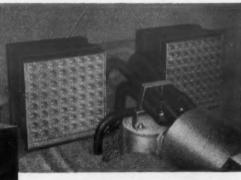


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Static helical blades in the ROTONAMIC air filter give a whirling motion to the air as it enters at A. Still keeping to a helical path, the air is then induced to reverse direction, centrifuging the solids out of suspension before 90% of it is fed to the engine B. The other 10% is aspirated away with the removed solids through the tube at the base of the panel.

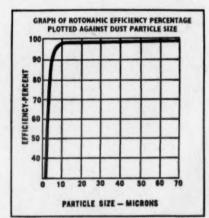


NO MAINTENANCE and extremely high efficiency are the most important money-saving factors of ROTONAMIC air filters for diesels. Aspiration of dust particles can be provided by a simple extractor operated from the engine exhaust system. ROTONAMIC filters are made in England by INTERMIT LTD. Please write for leaflet FRC9.



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1111 BIRFIELD GROUP

IMPORTANT CONTRACTS

L.M.R. Orders Tampers

SATISFACTORY results in trials of a hydraulic track tamping machine purchased in 1957 have led the London Midland Region of British Railways to order a further 17 machines from Plasser Railway Machinery Company. They will augment 18 track tampers of an older type already in use in the region in track improvement the process of the property of the process of the pr work for main-line electrification. The hydraulic machine, which embodies 16 vibrating tools and an automatic device which controls forward motion from sleeper to sleeper, compacts the ballast in between as well as underneath the sleepers and, with adjustable pressure, has an efficiency inde-pendent of operator judgment.

Ashok Leyland Bus Orders

Among recent important orders for Indian-built Leyland passenger vehicles placed with Ashok Leyland, Limited, Madras, by municipal operators are one from B.E.S.T. (Bombay) for 50 double-deck Pneumo-Cyclic Titans, one from Delhi for 30 Comet and eight Worldmaster single-deckers and one from Ahmedabad for 10 Tiger Cubs. Ashok Leyland goods vehicles ordered recently include 12 Comet tippers with Simpson steel bodies for Hoctief Gammon Pvt., Limited.

North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include the following: Wright, Anderson and Co., Limited, Gateshead, for steel for reconstruction of bridges at Pelaw junction and on Goole—Wakefield line.

Ransomes, Sims and Jefferies, Limited, Ipswich, for a mobile crane for Hull.

Ransomes, Sims and Jefferies, Limited, Ipswich, for a mobile crane for Hull.

Sedgwicks, Limited, East Ham, for a plate bending and folding machine for Walker Gate Works.

Weilerman Bros., Limited, Sheffield, for work on bridge over Cod Beck.

A.r Electric Welding Machines, Limited, Inverness, for a rail

Eastern Region Contracts

The Eastern Region of British Railways has

The Eastern Region of British Railways has placed the following contracts:

J. Westwood and Co., Limited, London, E.14, for reconstruction work on bridges over Valance Road and Hemming Street between Liverpool Street and Bethnal Green.

The Siemens and General Electric Railway Signal Co., Limited, Wembley, for supply and installation of relays, feed equipment, cables, lineside apparatus cases, etc., required for sub-division of track circuits between Shenfield and Southend Victoria.

The Cleveland Bridge and Engineering Co., Limited, Darlington, for reconstruction of bridge over River Lynch between Broxbourne and Roydon.

W. and C. French, Limited, Colchester, for reconstruction work on six bridges between Chelmsford and Colchester.

Southern Region Contracts

The following contracts have been placed by the

The following contracts have been placed by the Southern Region of British Railways: Taylor Woodrow Construction, Limited, Southall, for new berthing and maintenance depot for diesel-electric locomotives at Hither Green.

Dorman Long and Co., Limited, London, S.W.x, for fabricated steelwork for new buildings at Victoria.

The Bostwick Gate and Shutter Co., Limited, London, N.W.10, for new barrier gates at Cannon Street.

Ozonair Engineering Co., Limited, Rochester, for ventilation and heating installation at Bromley South.

Meridian Airmaps, Limited, Shoreham Airport, for aerial surveys at Wokingham, Tonbridge and Lewes.

Cartographical Drawing Services, Limited, Southampton, for aerial surveys at Gomshall, Tonbridge and Penshurst.

B.K.S. Air Surveys, Limited, Leatherhead, for aerial surveys at Gomshall, Tonbridge and Forest Row.

Underground Locomotive Signalling

An order has been received by the Westinghouse Brake and Signal Co., Limited, from the National Coal Board Durham Division for underground Coal Board Durham Division for underground locomotive signalling equipment for controlling approximately 26 locomotives hauling trains of mine cars and manriding cars over approximately 24 track miles in connection with the Murton—Eppleton combined mine scheme. The system adopted is one which is driver operated and is fully signalled with relay interlocking and includes approximately 90 colour-light signals and approximately 42 sets of power-operated switches. A track diagram will also be provided for use in the dispatcher's cabiu at the approach to the central drawing shaft on each of two levels. All the equipment to be used is certified as safe for use in gaseous ment to be used is certified as safe for use in gase mines, i.e. flameproof, or intrinsically safe. is undoubtedly the largest single underground loco-motive signalling system ever to be considered and adopted for British mines.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.I.

November 13—Belgian Congo.—Ministry of Colonies, Brussels, for 10,873 TYRAIS and 6,457 INNER TUBES of various types and sizes. Specifications (373/17/163/58) from Service des Approvisionnements du Ministere des Colonies, I rue de la Regence, Brussels, for B.Fr. 50.

November 19—Union of South Africa.—South African Railways for 300 AXLEBOX CASINGS. Photocopies of tender documents from Export Services Branch, B.o.T., price 36. (ESB/26511/58.)

November 19—Ceylon.—International Co-operation Administration

eepfoot ROAD ROLLERS. Tender of the High Commissioner for ens, London, W.2. (Tender No. November 19—Union of South Africa.—South African Rail-ways for large quantities of small items of Overhead Track RQUIPMENT. Photocopies of tender documents from Export Services Branch, B.o.T., price 9s. (ESB/26392/58.)

SHIPPING and SHIPBUILDING

Multi-Purpose Cargo Design

INTENDED for roll-on, lift-on, palletised, loose general or dry-bulk cargo, a new multi-purpose cargo ship design was disclosed in Washington by Captain V. C. Farrell, who invented the rolling wing deck. He said the ship was now in the designing stage. It has unobstructed weather decks which allowed an uninterrupted flow of lorries on each side of the holds. structed weather decks which allowed an uninterrupted flow of lorries on each side of the holds, eliminating the dangers of exhaust fumes which are encountered with lorry operation within a ship. The vessel has a large turntable at the stern which is used to position the two-way ramp on either side of the ship, thus providing easy access for lorries from dock to deck. For all practical purposes the turntable ramp converts the ship's weather deck into an extended pier apron, thus making it possible to utilise dock facilities having narrow aprons. having narrow aprons.

Cardiff Port Plan

A NEW scheme for development at the port of Cardiff has been prepared by Sir Herbert Merrett, former chairman of Powell Duffryn, Limited, and part-time member of the Railway Executive. It envisages a breakwater spanning the half-mile stretch of water between the existing dock entrance and Penarth Head. This would the half-mile stretch of water between the existing dock entrance and Penarth Head. This would enclose a 420-acre harbour and should solve the problem of silting-up of the present entrance channel. There would be sufficient depth of water to take ships up to 50,000 tons. The East and West Docks would be filled in to provide a 150acre site for industries.

Launch of New B.I. Ship

FIRST of the five new cargo liners building for the British India Steam Navigation Co., Limited, at the Govan yard of Harland and Wolff, Limited, was launched recently and christened Bulimba with a bottle of Australian Bulimba beer presented by the Queensland Brewery, Limited. The new ships represent a departure from recent B.I. practice, and are intended for the company's service between Australia, Asia and the Persian Gulf. A very considerable amount of operational analysis was carried out in order to settle basic parameters of the design, which was worked out

parameters of the design, which was worked out jointly between owner, consultant and builder. Particulars of the ship are: Length b.p. 395 ft., breadth moulded 59 ft., depth moulded to upper deck 32 ft. 6 in., draught (scantling) 25 ft., corresponding deadweight 7,500 tons (approx.), and speed 16 knots. The B class will be modern in appearance, the most noticeable features being the position of the machinery—there being one hold aft of the engine-room—the presence of a long poop and the arrangement of deck cranes and poop and the arrangement of deck cranes and streamlined mast. A basic feature of the design is the attention that has been paid to the cargo handling arrangements. All weather deck hatches are large and closed by single-pull hatch covers arranged for push-button control while the tween deck hatch covers will be flush MacGregor pattern hydraulically operated and remotely controlled from the weather deck from the weather deck.

FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

G. Beaton and Son

The directors of G. Beaton and Son, Limited, announce that they have received from the George Cohen 600 Group an offer of 4s. per share for the whole of the 1,500,000 issued 2s. 6d. shares. They recommend acceptance and have agreed to accept it in respect of their own holdings.

Spurling Motor Bodies

Spurling Motor Bodies, Limited, is paying a final ordinary of 10 per cent, making total of 15 per cent (same). An interim of 5 per cent in respect of the year ending May 31, 1959, is being paid. Net profits for the year ended May 31, 1958, were £125,789 (£103,997) before tax of £77,715 (£05,640).

Trojan and Lambretta

An announcement has been sent to the shareholders of Trojan (Holdings), Limited, that a proposed merger with Lamberta Concessionaires, Linited, is under consideration. Such a merger is considered to be of material benefit to both companies. Trojan, Limited, was established in 1914 and was embraced by Trojan (Holdings), Limited, in 1936.

Shelvoke and Drewry

In order to raise capital for the design and development of a new vehicle, and for other purposes, shareholders in Shelvoke and Drewry. Limited, are being offered 425,000 ordinary 5s. shares at par in the ratio of one share for every two held. The dividend for year ended July 31 is to be raised by 2½ per cent to 15 per cent. Output for 1957-58 was a record at more than £1,250,000 and the order book is "most satisfactory."

A.B.C. Coupler and Engineering

The A.B.C. Coupler and Engineering Co., Limited, reports that group net profit for the nine months ended June 30. 1958, were £18. Not £452.48 for the year). Dividend is 10 per cent for period (20 per cent for year). The value of railway work orders fell substantially, and the results of subsidiaries Matting.





Whatever route your drivers travel, they can refuel with Shell Derv at the nation-wide network of Shell Derv agencies. At these agencies your drivers can, by showing a Shell Authority Card, refuel on a pre-arranged credit system, or they can pay cash. Ask your local office of Shell-Mex and BP Ltd. for full details of this scheme.

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